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Biological Services Program

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SEPTEMBER 1982

ATLAS OF THE SPAWNING AND NURSERY AREAS OF GREAT LAKES FISHES

Volume I - A Summary by Geographic Area

Great Lakes-St. Lawrence Seaway Navigation Season Extension Program

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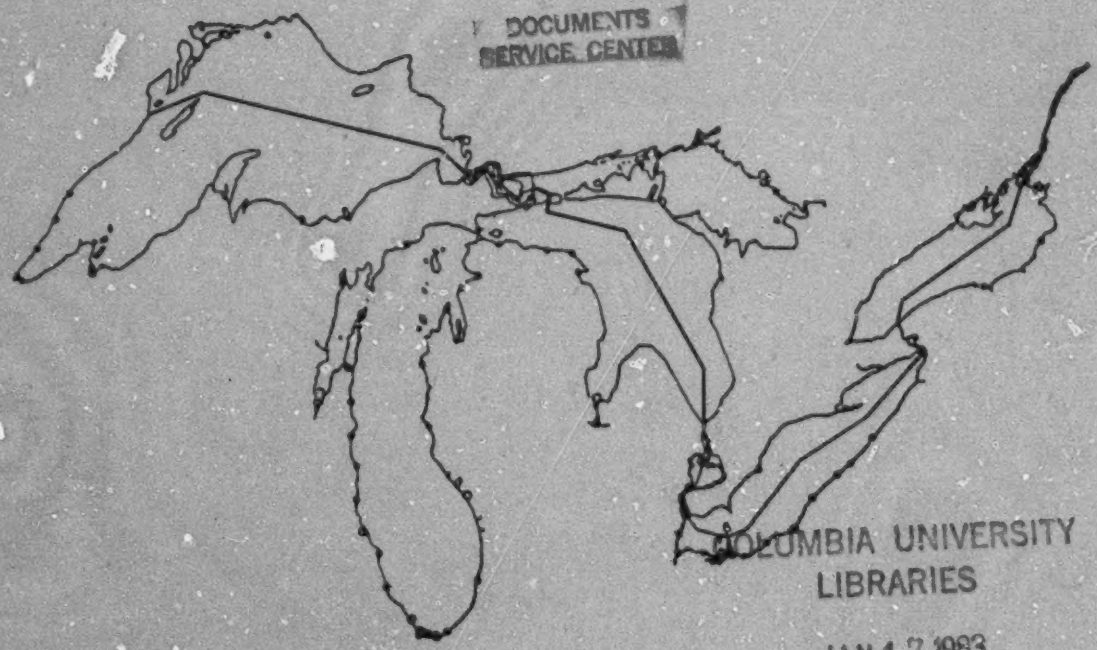

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- To strengthen the Fish and Wildlife Service in its role as a primary source of information on national fish and wildlife resources, particularly in respect to environmental impact assessment.
- To gather, analyze, and present information that will aid decisionmakers in the identification and resolution of problems associated with major changes in land and water use.
- To provide better ecological information and evaluation for Department of the Interior development programs, such as those relating to energy development.

Information developed by the Biological Services Program is intended for use in the planning and decisionmaking process to prevent or minimize the impact of development on fish and wildlife. Research activities and technical assistance services are based on an analysis of the issues, a determination of the decisionmakers involved and their information needs, and an evaluation of the state of the art to identify information gaps and to determine priorities. This is a strategy that will ensure that the products produced and disseminated are timely and useful.

Projects have been initiated in the following areas: coal extraction and conversion; power plants; geothermal, mineral and oil shale development; water resource analysis, including stream alterations and western water allocation; coastal ecosystems and Outer Continental Shelf development; and systems inventory, including National Wetland Inventory, habitat classification and analysis, and information transfer.

The Biological Services Program consists of the Office of Biological Services in Washington, D.C., which is responsible for overall planning and management; National Teams, which provide the Program's central scientific and technical expertise and arrange for contracting biological services studies with states, universities, consulting firms, and others; Regional Staffs, who provide a link to problems at the operating level; and staffs at certain Fish and Wildlife Service research facilities, who conduct in-house research studies.

FWS/OBS-82/52
September 1982

ATLAS OF THE SPAWNING AND NURSERY AREAS OF GREAT LAKES FISHES

VOLUME I
Spawning and Nursery Areas of Great Lakes Fishes: A Summary by Geographic Area

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PREFACE

The fish resources of the Great Lakes have changed markedly since the settlement of the Great Lakes Basin began in the late 1700s-early 1800s. Local declines in the abundance of some highly valued species that supported early fisheries were reported in the 1800s. By the late 1950s-early 1960s, a number of important native species had disappeared from the catch, most once-productive stocks were depleted, and the fisheries that persisted were supported mainly by species of low value and utility. These undesirable changes have been attributed to the overharvest of desirable species, the invasion and introduction of undesirable exotic species, lowered water quality, and the destruction of portions of the physical habitat, including spawning grounds, vital to the maintenance of the resource base.

Since the 1950s, intensive efforts have been mounted to reestablish stable, self-sustaining fish communities, mainly by reducing sea lamprey abundance, limiting the harvest of remnant native stocks, and stocking desirable native or exotic species to replace or supplement depleted populations. Many of the native species and some of the desirable, introduced species have responded favorably and are now supporting valuable, productive fisheries. These successes suggest that continued judicious exercise of established management strategies will result in further significant improvements in the fish resources and the fisheries. An emerging perspective suggests, however, that enduring, major improvements in the fish resources and the fisheries will require greater emphasis on rehabilitation efforts directed more specifically at safeguarding and improving the quality of the fish habitat in general, and on ensuring fuller utilization of the specialized habitat required by sensitive, embryonic-juvenile life stages of species that are to be included in any future, self-sustaining resource base. We prepared this atlas to provide a comprehensive information base against which changes in the condition and use of spawning and nursery habitat of Great Lakes fishes could be viewed and evaluated and the needs of the future, self-sustaining resource base could be projected.

The atlas is composed of the following 14 volumes:

I. Spawning and Nursery Areas of Great Lakes Fishes: A Summary by Geographic Area

II. Lake Superior

III. St. Marys River

IV. Lake Michigan

V. Lake Huron

VI. St. Clair River

VII. Lake St. Clair

VIII. Detroit River

IX. Lake Erie

X. Niagara River

XI. Lake Ontario

XII. St. Lawrence River

XIII. Reproductive Characteristics of Great Lakes Fishes

XIV. Literature Cited

Volume I is designed to permit the reader to determine quickly whether a particular geographic area of interest contains fish spawning or nursery areas that are described in volumes II-XII. Volumes II-XII consolidate existing information describing spawning and nursery areas used by stocks of fish, including anadromous stocks, considered to be residents of the Great Lakes and their connecting waters. The information presented for each spawning or nursery area identified in volumes II-XII includes, when known, the area's precise location, history of use, season of use, water temperatures during the season of use, major substrate type, and water depth. Pre- and post-spawning migrations of mature fish and movements of young fish are also described, insofar as this information serves to better delineate spawning or nursery areas. Volume XIII contains concise descriptions of the reproductive characteristics of species included in volumes I-XII.

In the preparation of the atlas we found that considerable information was available for most of the species that support (or supported) major recreational or commercial fishes, or that are or were major components of the forage base; conversely, relatively little information was available for many other species not included in these general categories. For most species, spawning areas were more completely described than were nursery areas. The historical information in particular provided more extensive descriptions of spawning areas than of nursery areas, because much of this information was obtained from records of fisheries that had been conducted for spawning fish. Thus, although the information available to us for compilation was relatively extensive, it was nonetheless incomplete for the reasons given above. Users of the atlas are therefore cautioned not to view the lack of explicit reference to a given area as conclusive evidence that the area is not or was not a spawning or nursery area of Great Lakes fishes.

Published and unpublished information incorporated in the atlas was obtained from the following sources:

1) Computerized Information Services

   Aquatic Sciences and Fisheries Abstracts, BIOSIS, Denver Public Library Fish and Wildlife Reference Service, Dissertation Abstracts, INFORUM (Atomic Industrial Forum), National Technical Information Service, SCISEARCH, and Smithsonian Science Information Exchange.

2) State Agencies

   Indiana, Minnesota, Ohio, and Wisconsin Departments of Natural Resources, Illinois Department of Conservation, New York Department of Environmental Conservation, Pennsylvania Fish Commission, Ohio Environmental Protection Agency, and Pennsylvania Department of Environmental Resources.

3) Federal Agencies

Canada Great Lakes Biolimnology Laboratory (Sault Ste. Marie and Burlington), Canada National Water Research Institute, Canada Sea Lamprey Control Centre, Great Lakes Basin Commission, Great Lakes Fishery Commission, U.S. Army Corps of Engineers, U.S. Environmental Protection Agency, and U.S. Fish and Wildlife Service.

4) Academic Institutions (by state)

Illinois--Loyola University, Northern Illinois University, University of Illinois (Champaign).

Indiana--Ball State University, University of Notre Dame.

Michigan--Eastern Michigan University, Lake Superior State College, Macomb Community College, Michigan State University, Northern Michigan University, Oakland University, University of Michigan, Wayne State University.

Minnesota--University of Minnesota (Duluth and St. Paul).

New York--Cornell University, State University College at Buffalo, State University of New York (Brockport, Buffalo, Oswego, Postsdam, and Syracuse).

Ohio--John Carroll University, Ohio State University, University of Toledo.

Ontario--Lakehead University, University of Guelph, University of Toronto, Western Ontario University.

Pennsylvania--Behrend College, Edinboro State College, Gannon College, Pennsylvania State University.

Wisconsin--University of Wisconsin (Green Bay, Madison, Milwaukee, Stevens Point, Superior, and Washington County).

5) Electric Utility Companies

Cleveland Electric Illuminating Company, Commonwealth Edison-Indiana, Consumers Power Company, Detroit Edison Company, Minnesota Power and Light Company, New York Power Pool, Niagara Mohawk Power Corporation, Northern Indiana Public Service Corporation, Ohio Edison Company, Ontario Hydro, Power Authority of the State of New York, Rochester Gas and Electric Corporation, Toledo Edison, Wisconsin Electric Power Company, Wisconsin Power and Light Company, and Wisconsin Public Service Corporation.

6) Consulting Firms

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7) Other Institutions and Organizations

Argonne National Laboratory, Buffalo Waterfront Development Commission, Cranbrook Institute of Science, Illinois Field Museum of Natural History, Philadelphia Academy of Natural Science, Royal Ontario Museum, and St. Lawrence-Eastern Ontario Commission.

8) Fishermen

Commercial fishermen in Indiana, Minnesota, and Ohio, and recreational and charter boat fishermen on Lake St. Clair and the St. Clair River.

Most of the unpublished information included in the atlas was obtained from interviews conducted with individuals associated with the various agencies, institutions, or user groups identified above.

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INTRODUCTION

We prepared this volume to permit the reader to determine quickly whether a particular geographic area of interest in the Great Lakes or their connecting waters contains fish spawning or nursery areas that are identified in volumes II-XII of the atlas. In this volume we present the information for each of the five Great Lakes by lake, by statistical fishing district (Smith et al. 1961) within the lake and by geographic area within the statistical fishing district. Each geographic area includes about 20 miles of mainland shoreline (island shoreline in MS-1), together with the adjacent littoral and offshore waters. Because the connecting waters have not been assigned to statistical fishing districts, we present the information for them by waterbody and by geographic area within the waterbody. We divided the rivers, which together with Lake St. Clair form the Great Lakes connecting waters, into geographic areas; each such riverine geographic area includes all of the waters between adjacent mainland shorelines (sometimes adjacent mainland and island shorelines in the St. Marys River), for a distance of about 15-20 miles along the course of the river. We divided Lake St. Clair into four geographic areas each including about 15-20 miles of shoreline, together with the adjacent littoral waters.

To use this volume the reader should first locate the geographic area of interest on one of the maps provided herein and then refer to the corresponding table in which the spawning or nursery area information for the geographic area of interest is summarized.

Tables 1-11 list the species or taxonomic groups that have spawning or nursery areas in each geographic area; indicate whether the spawning or nursery areas are located in tributary, littoral, offshore, or navigation channel waters within the geographic area; list the spawning or nursery areas as confirmed, probable, or potential; and identify species whose continued existence was considered to be in jeopardy (i.e. those species designated as "rare and protected," "threatened," "endangered," etc. on State or Federal listings current in August, 1981; see also footnotes to tables 1-11).

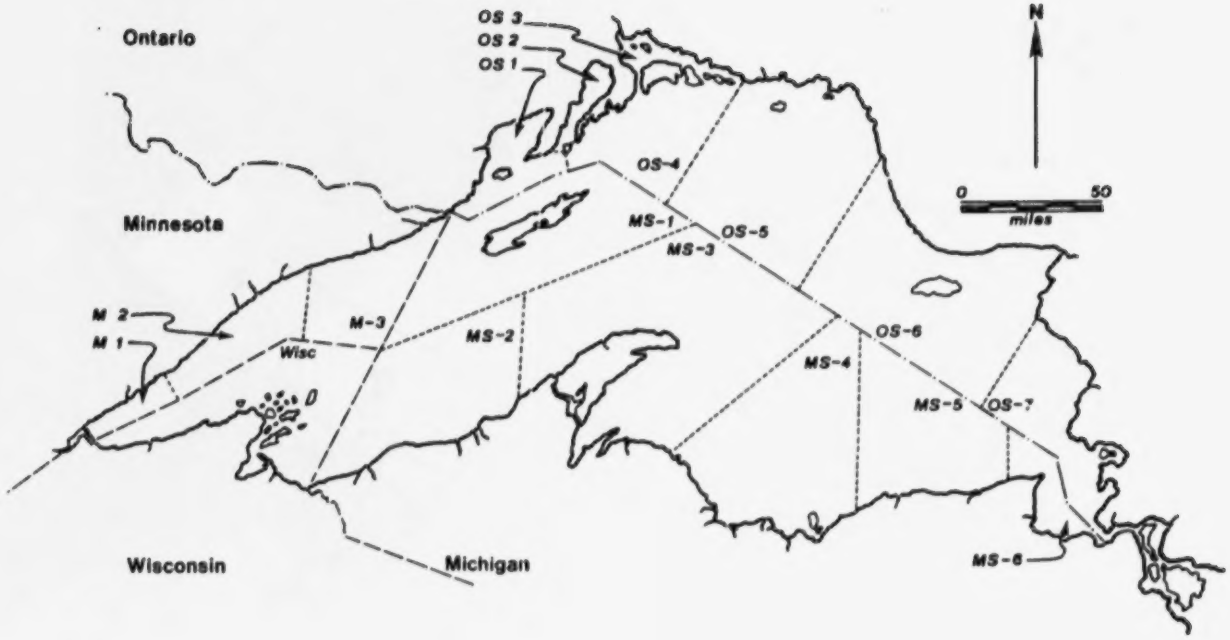
The terms used in Tables 1-11 are defined as follows:

Tributary waters are those streams or rivers which flow directly into the Great Lakes or their connecting waters. For the Great Lakes proper, littoral mainland waters are those between the mainland shoreline and the adjacent 30 ft depth contour, offshore waters are those outside the littoral mainland waters, and littoral offshore waters are offshore waters that lie within the 30 ft depth contour surrounding an island, shoal, or reef. For the connecting waters, littoral waters are those between the shoreline and the edge of the navigation channel, and navigation channel waters are those within the navigation channel as that channel is delineated on USDOC-NOAA National Ocean Survey maps for the Great Lakes and Connecting Waters.

Confirmed spawning areas are those positively identified in the literature or by personal communication as spawning areas. Identification is usually based on observation in typical spawning

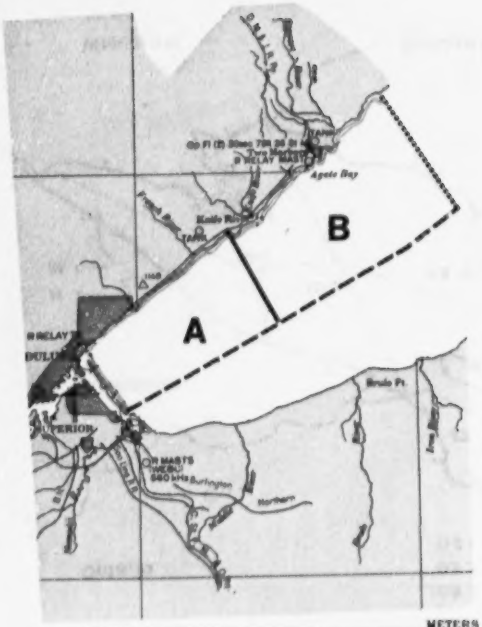
habitat during the spawning season of (1) concentrations of ripe individuals, (2) reproductive behavior typically associated with the spawning site, (3) alterations of the substrate typically produced by spawning fish, (4) deposited eggs, or (5) newly hatched prolarvae or sac fry (only for species with demersal eggs). Most spawning areas identified in volumes I-XI of the atlas fall into this category. Probable spawning areas are those identified in the literature or by personal communication as probable spawning areas. Identification is usually based on the observation in typical spawning habitat of (1) concentrations of nearly ripe or recently spent fish, or (2) the presence of advanced prolarvae or swim-up fry. Potential spawning areas are those identified in the literature or by personal communication as potential or possible spawning areas. Identification is usually based on the observation that habitat in the area is similar to that elsewhere which typically permits spawning and production of viable fry.

Confirmed nursery areas are those positively identified in the literature or by personal communication as nursery areas. Identification is usually based on the observation of concentrations of young-of-the-year fish in spring-summer in typical nursery habitat. Most nursery areas identified in volumes I-XI of the atlas fall into this category. Probable nursery areas are those identified in the literature or by personal communication as probable nursery areas. Potential nursery areas are those identified in the literature or by personal communication as potential or possible nursery areas. Identification is usually based on the observation that the habitat appears similar to that elsewhere which typically permits survival of fish from hatching through the first summer of life.



LAKE SUPERIOR

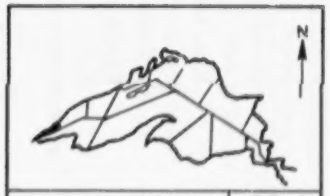
International Boundary
State Boundary
Statistical Fishing District
Geographic area



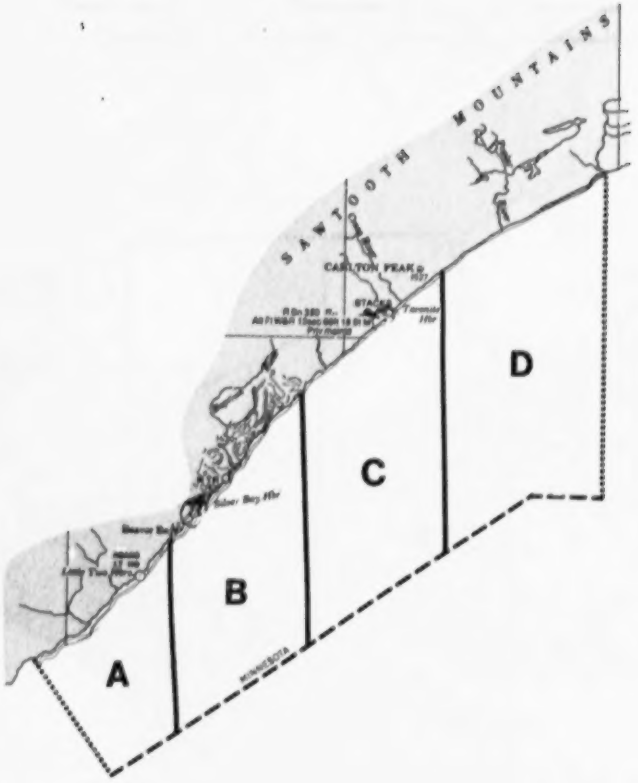
METERS

STATUTE MILES

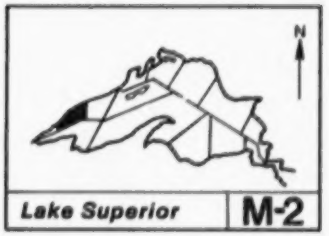
10 0 10 20 30 40 50 60

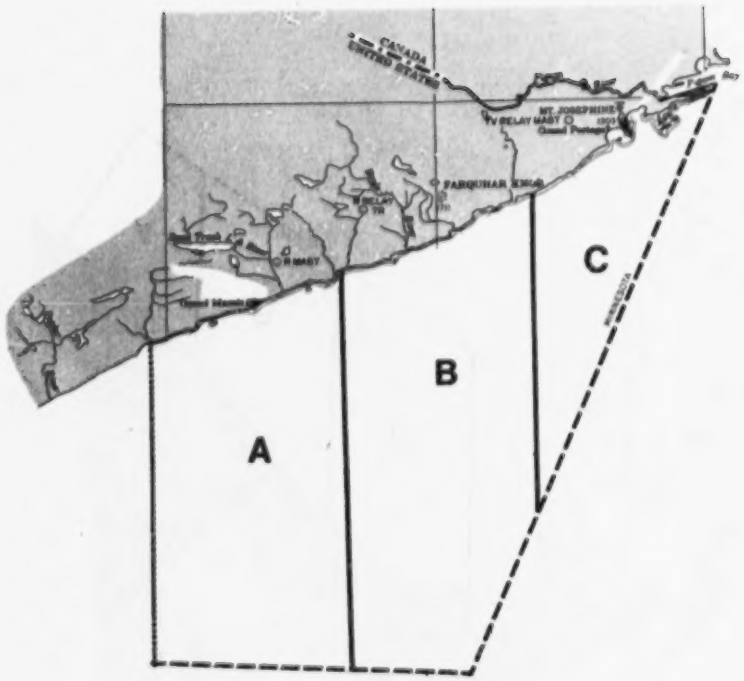


Lake Superior | M-1

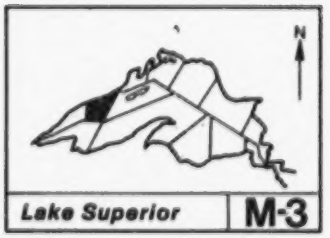

SAWTOOTH MOUNTAINS
CARLTON PEAK
A
B
C
D
MINNESOTA

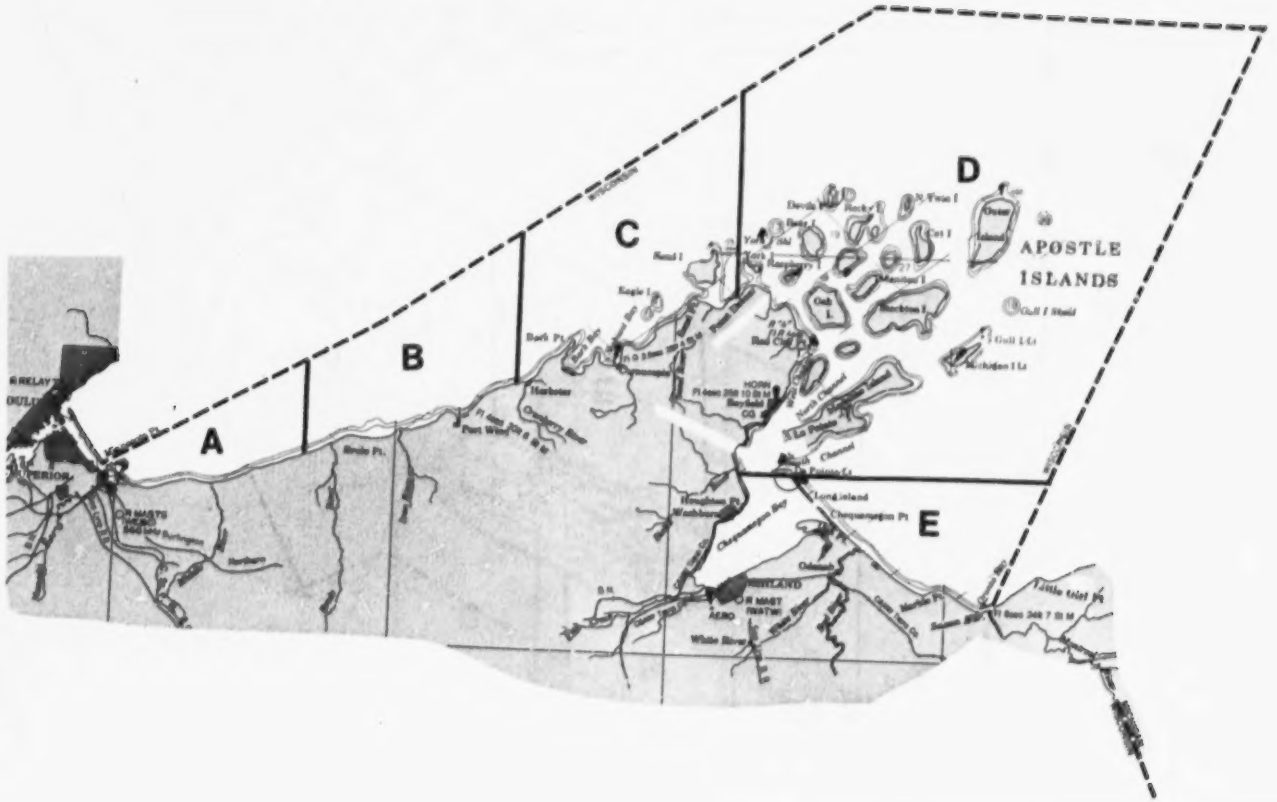
METERS
STATUTE MILES
10
0
10
20
30
40
50
60


N
Lake Superior
M-2


CANADA
UNITED STATES
MT. JOSEPHINE
TV RELAY MAST
FARQUHAR KNOB
A
B
C

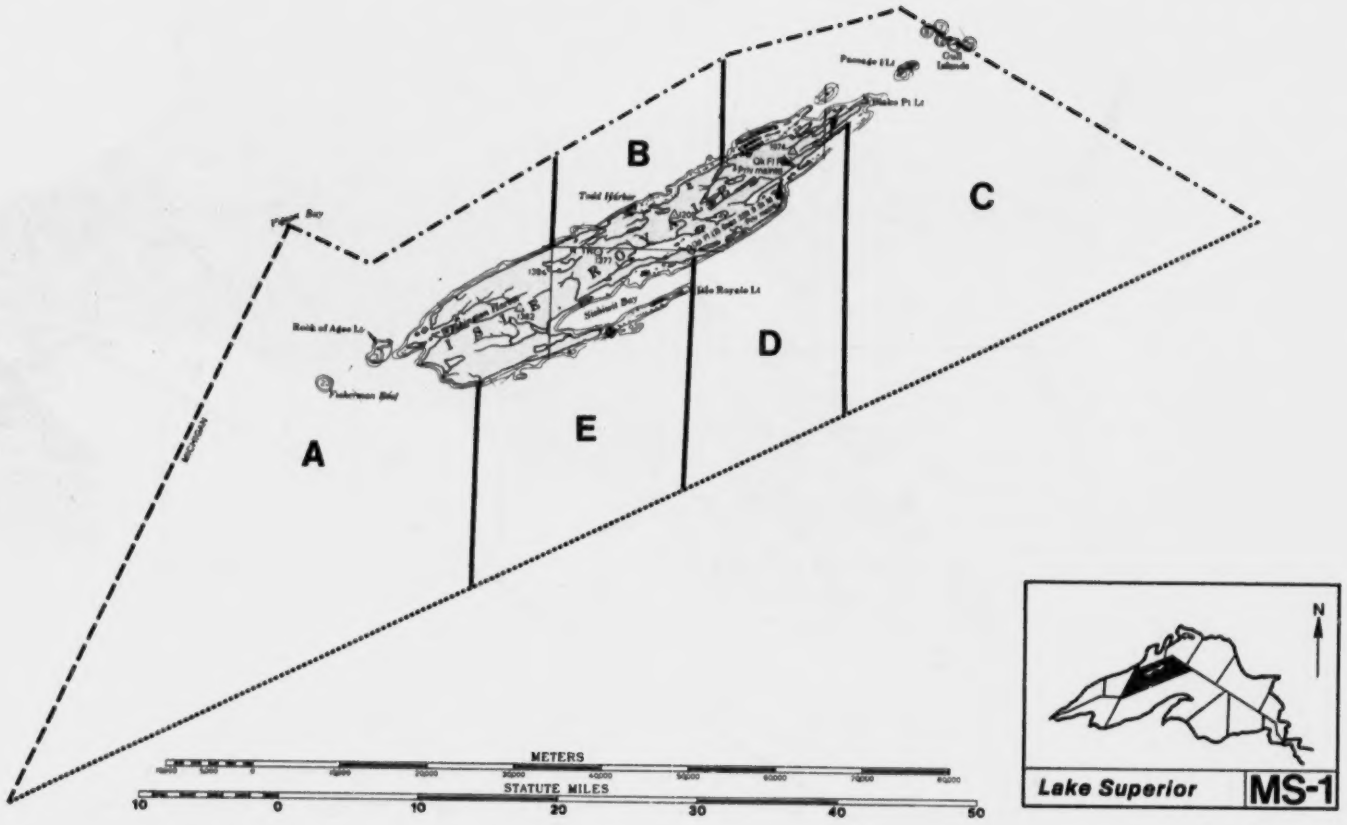
METERS
STATUTE MILES
10
0
10
20
30
40
50
60

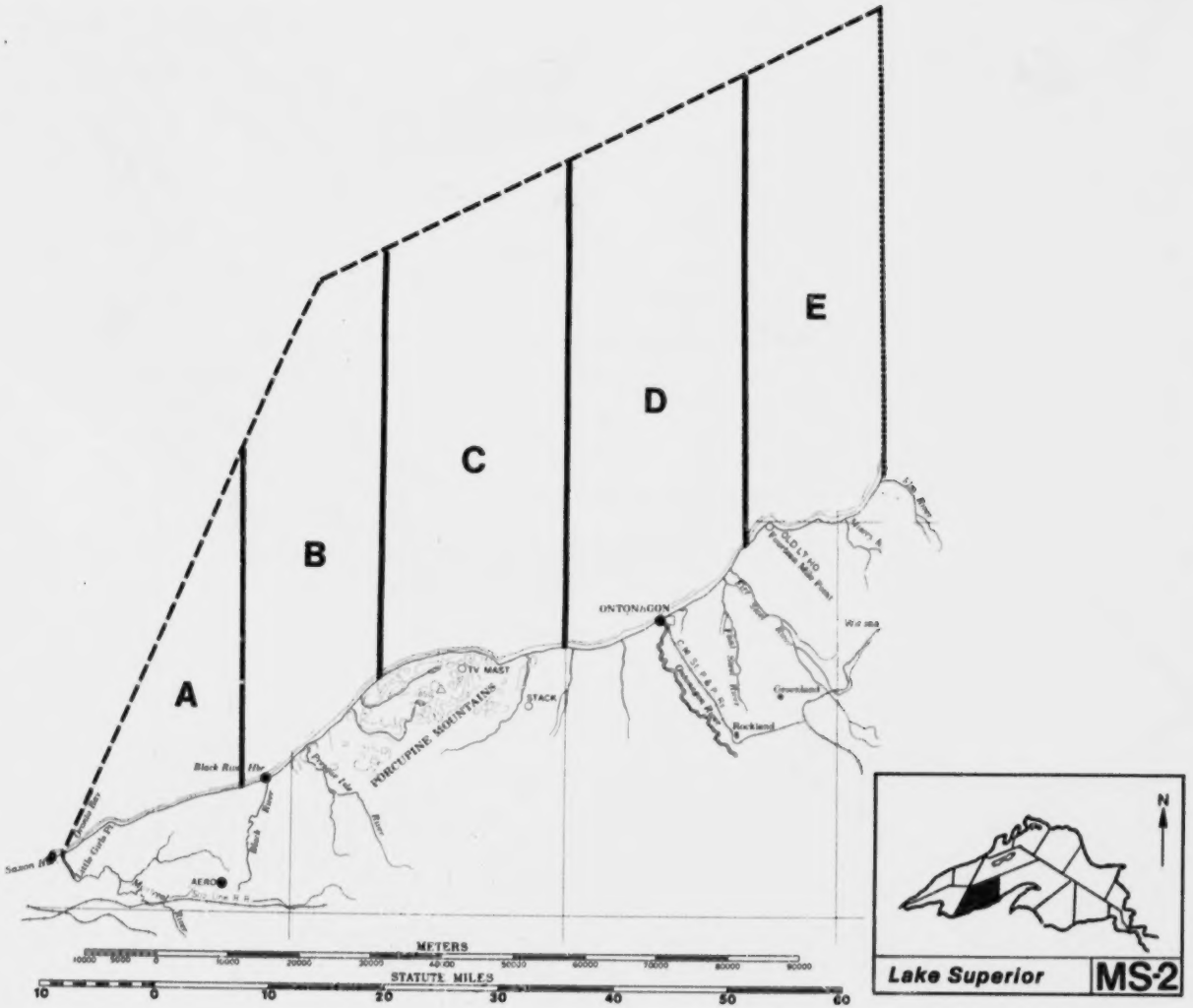

N
Lake Superior
M-3

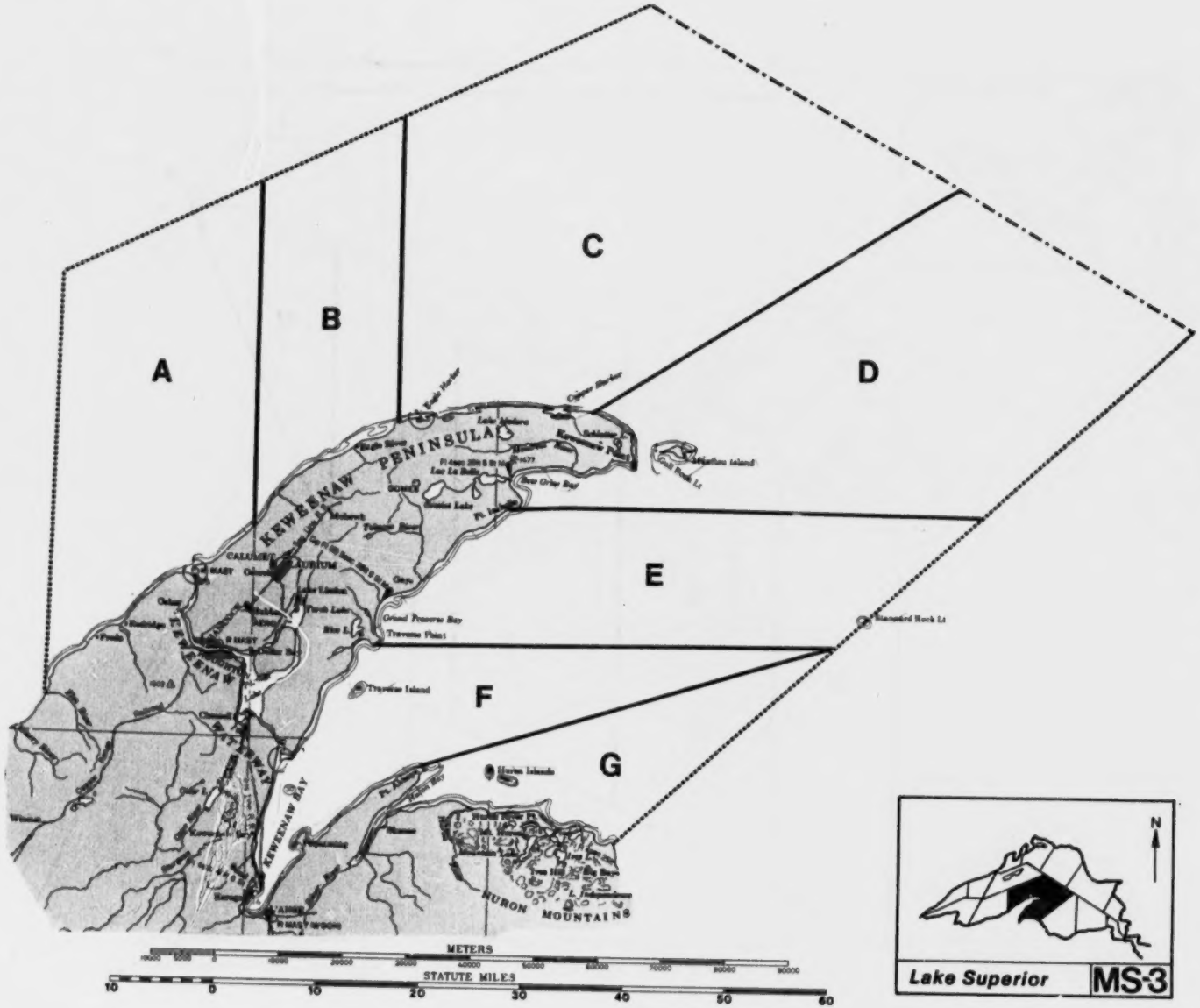

A
B
C
D
E
APOSTLE
ISLANDS

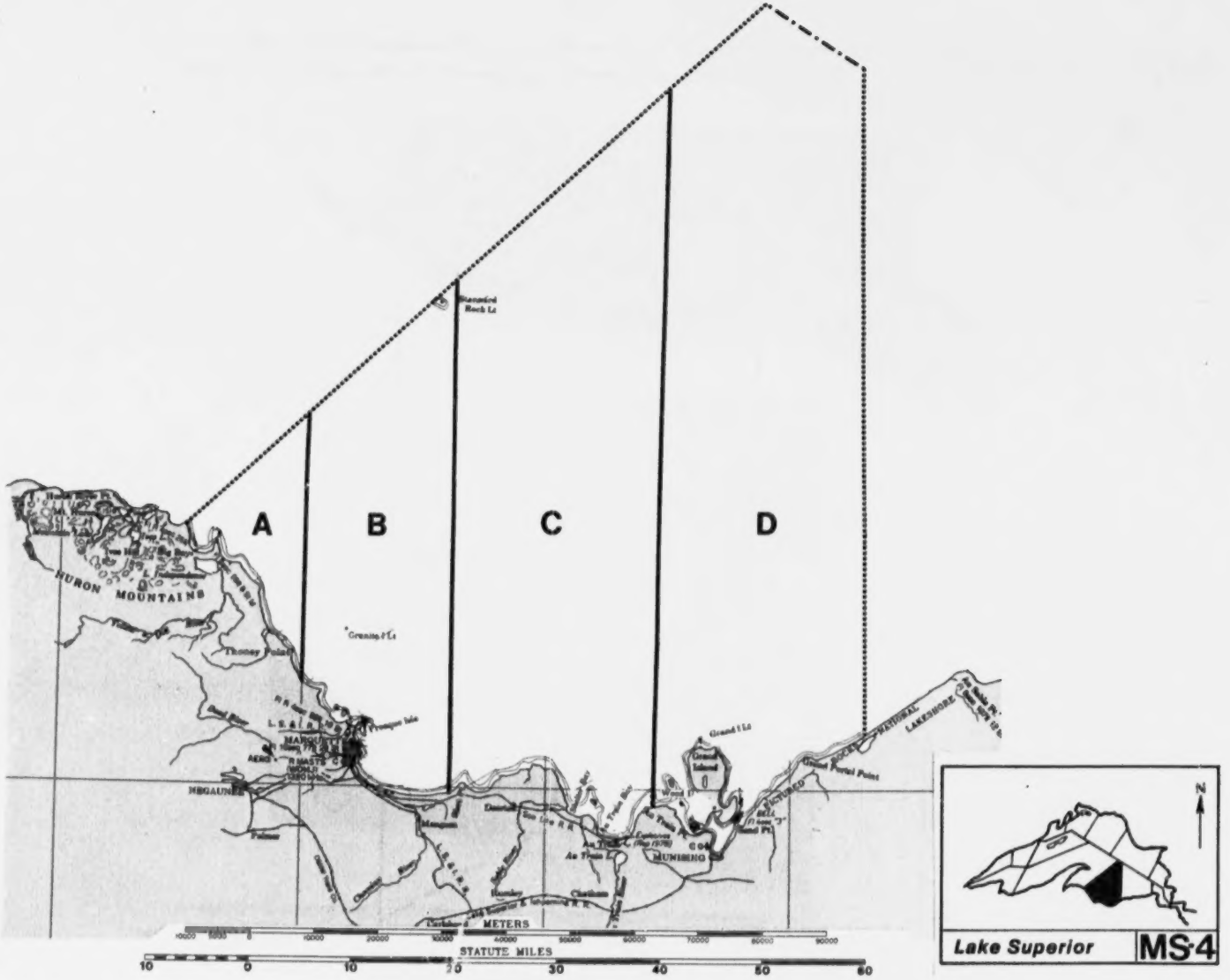
METERS
STATUTE MILES
10
0
10
20
30
40
50
60

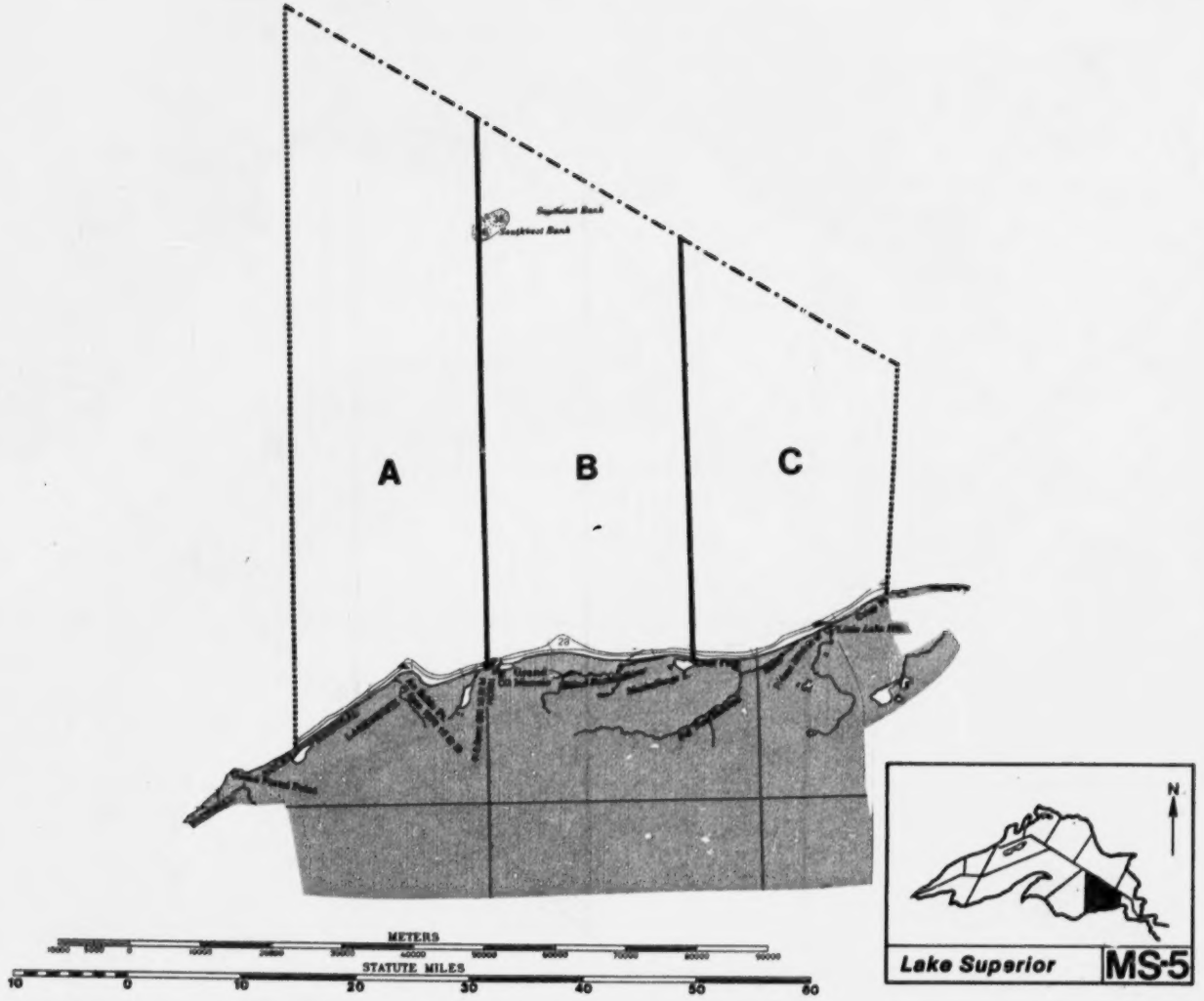
N
Lake Superior
Wisc

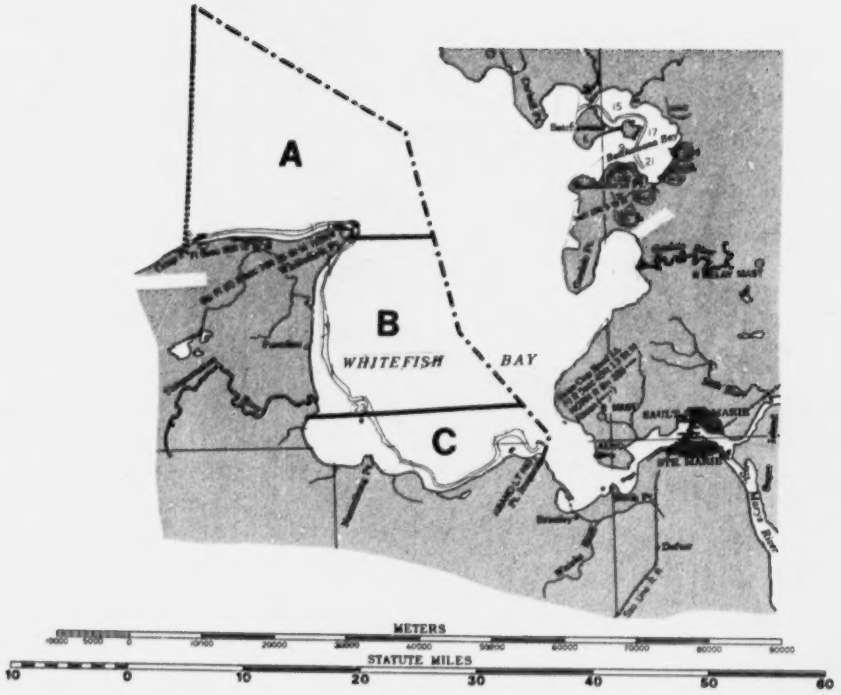

B
C
D
E
A
METERS
STATUTE MILES
10
0
10
20
30
40
50
N
Lake Superior
MS-1


A
B
C
D
E
ONTONAGON
TV MAST
STACK
PORCUPINE MOUNTAINS
Black River Hbr.
AERO
Rockland
Greenland
METERS
STATUTE MILES
10 0 10 20 30 40 50 60
N
Lake Superior
MS-2

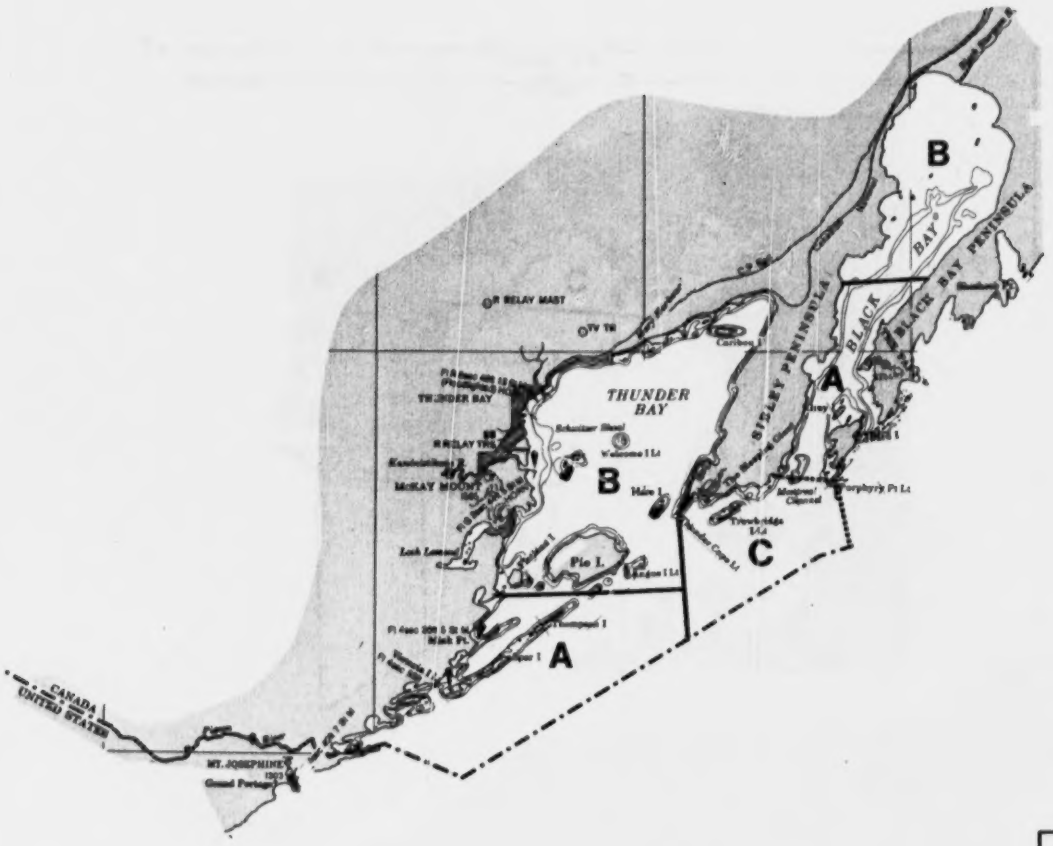

A
B
C
D
E
F
G
KEWEENAW PENINSULA
KEWEENAW BAY
HURON MOUNTAINS
Lake Superior
MS-3
N
METERS
STATUTE MILES
10
0
10
20
30
40
50
60

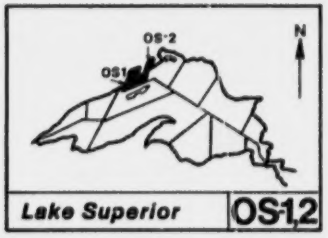

A
B
C
D
HURON MOUNTAINS
MARQUETTE
NEGAUNEE
MUNISING
METERS
STATUTE MILES
10 0 10 20 30 40 50 60
N
Lake Superior
MS-4

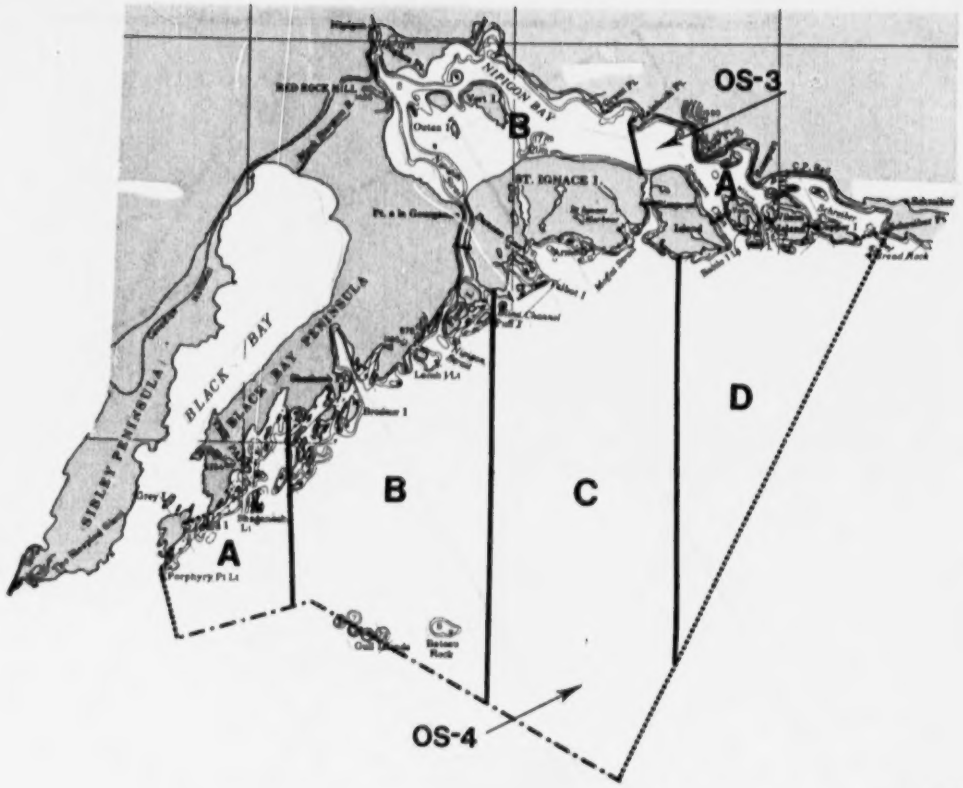

A
B
C
METERS
STATUTE MILES
10 0 10 20 30 40 50 60
N
Lake Superior
MS-5

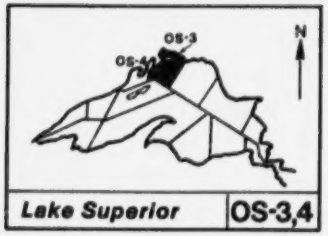

A
B
WHITEFISH BAY
C
METERS
STATUTE MILES
10 0 10 20 30 40 50 60

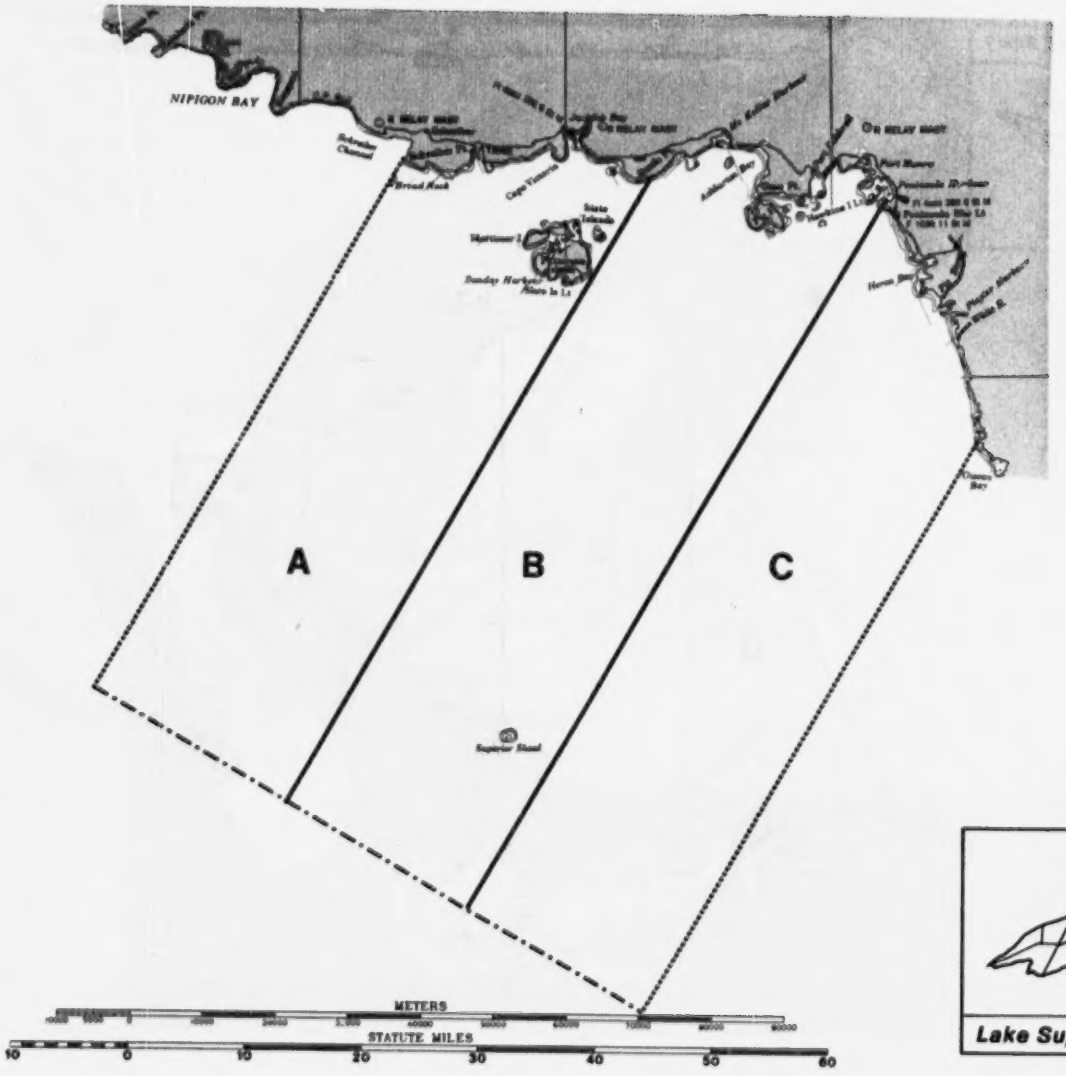
N
Lake Superior
MS-6

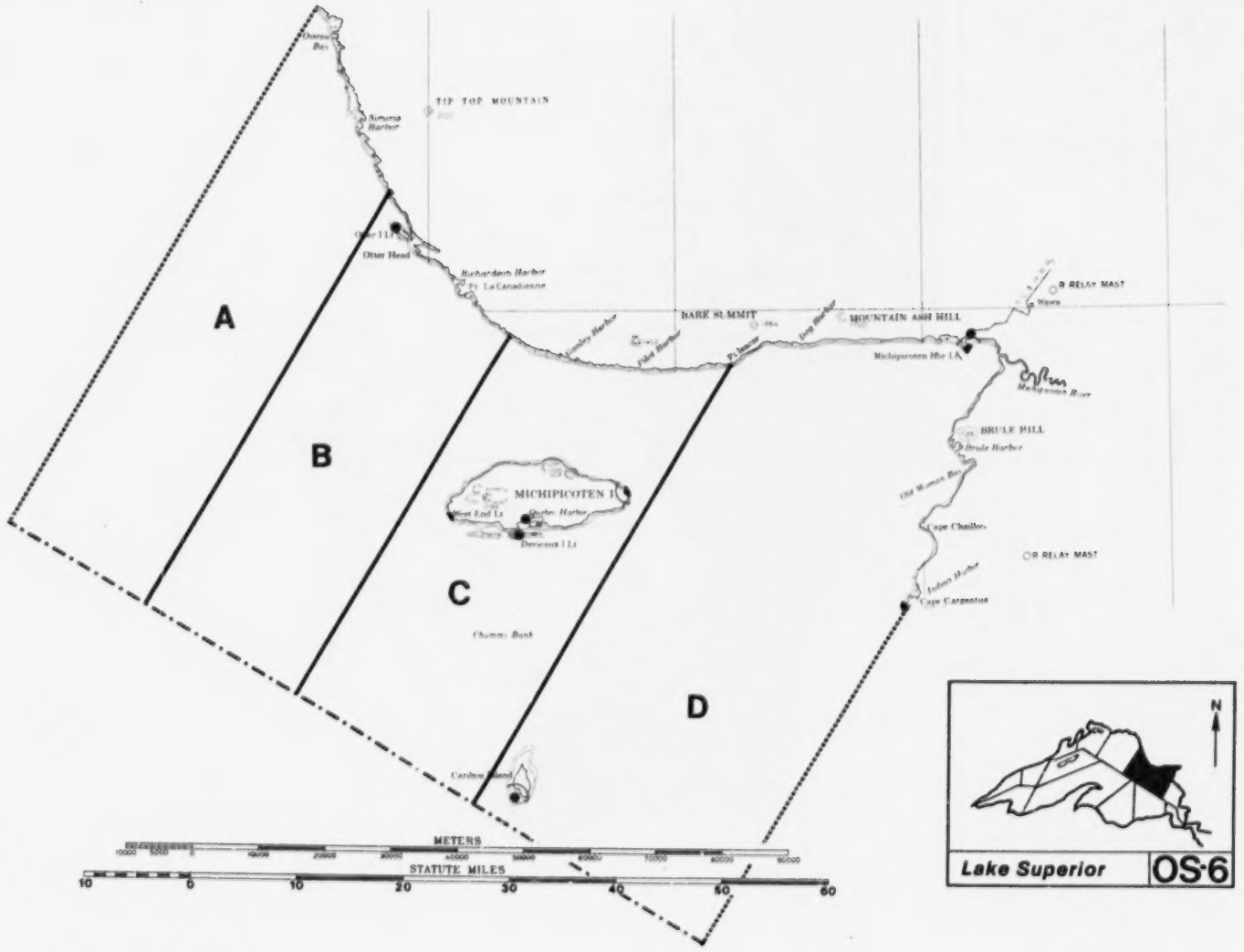

THUNDER BAY
SIBLEY PENINSULA
BLACK BAY
BLACK BAY PENINSULA
McKAY MOUNT
Pie I.
A
B
C
CANADA
UNITED STATES
MT. JOSEPHINE
METERS
STATUTE MILES
10 0 10 20 30 40 50 60


OS-2
OS1
N
Lake Superior
OS-1,2


OS-3
OS-4
A
B
C
D
NIPIGON BAY
ST. IGNACE I.
BLACK BAY
BLACK BAY PENINSULA
SIBLEY PENINSULA
Porphyry Pt Lt
METERS
STATUTE MILES
10 0 10 20 30 40 50 60


OS-3
OS-4
N
Lake Superior
OS-3,4


NIPIGON BAY
A
B
C
METERS
STATUTE MILES
10
0
10
20
30
40
50
60
N
Lake Superior
OS-5


TIP TOP MOUNTAIN
Otter Head
Otter I Lt
Harbordom Harbor
Ft. La Canadienne
BARE SUMMIT
MOUNTAIN AND HILL
R RELAY MAST
Michipicoten Hbr Lt
BRULE HILL
Brule Harbor
MICHIPICOTEN I
Devereux I Lt
Cape Chaillon
R RELAY MAST
Cape Gargantua
A
B
C
D
METERS
STATUTE MILES
10
0
10
20
30
40
50
60
N
Lake Superior
OS-6

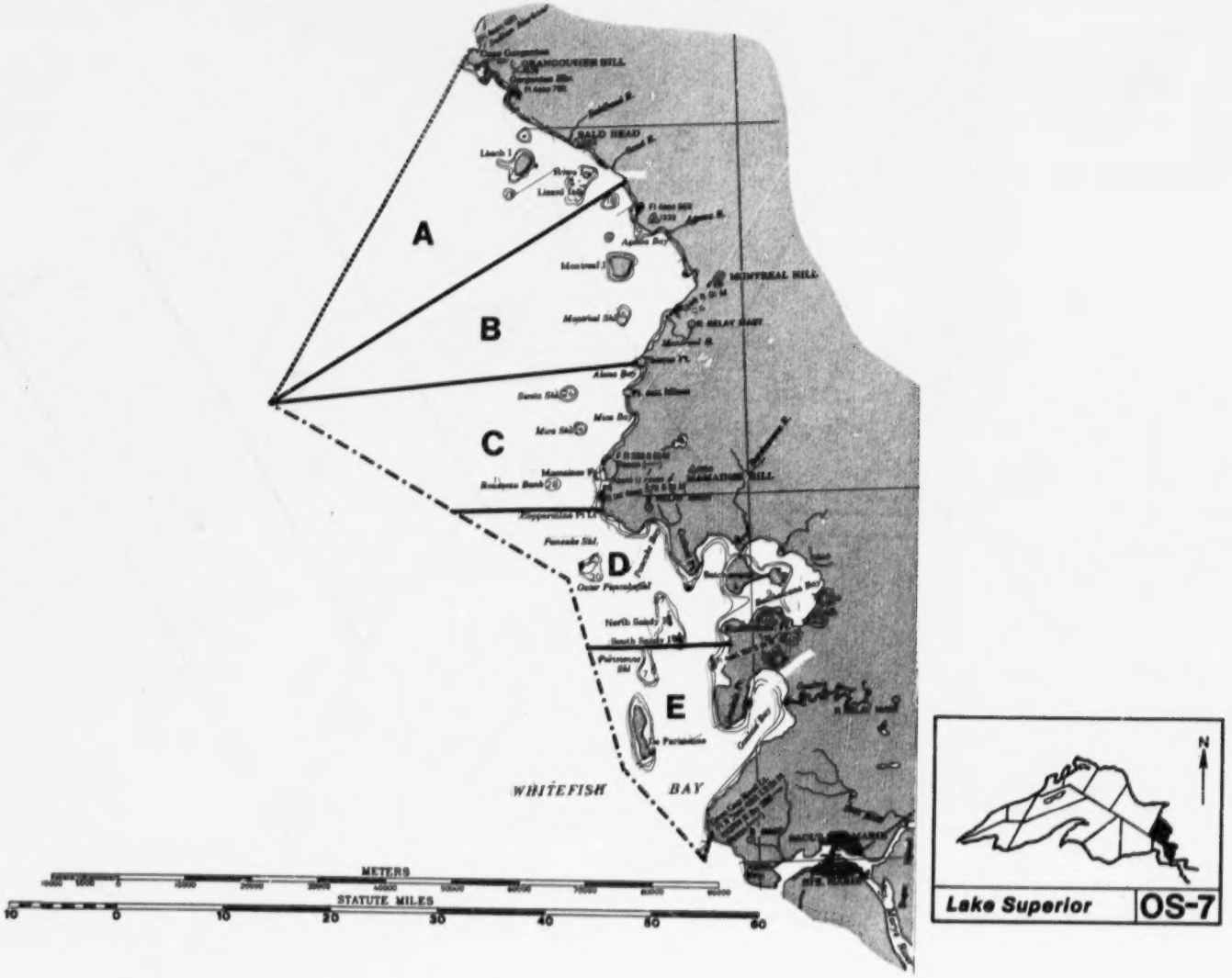

A
B
C
D
E
WHITEFISH BAY
METERS
STATUTE MILES
10 0 10 20 30 40 50 60
N
Lake Superior
OS-7

Table 1. Fishes[1] with spawning or nursery areas[2] in tributary, littoral mainland, offshore, or littoral offshore waters[3] of Lake Superior.

Statistical fishing district	Geographic area		Spawning area		Nursery area
M-1	A	T:	1(C), 2[4](C), 21(C,P), 22(C), 24(C), 27(C), 29(C), 38(C), 41(C), 42(C), 46(C), 75(C), 76(C), 87(C), 81(C), 84(C), 90(C), 108, 113, 116, 126(C), 130(C)	T:	1(C), 22(C), 38(C), 76(C), 87(C), 90(C), 126(C), 130(C)
		LM:	8(C), 13(C), 14(C), 25(C), 26(C), 31(C,Po), 38(C), 41(C), 42(C), 46(C), 75(C), 76(C), 81(C), 84(C), 90(C), 125(C), 126(C)	LM:	8(C), 13(C), 26(C), 38(C), 41(C), 52(C), 75(C), 76(C), 87(C), 81(C), 84(C), 99(C), 126(C), 130(C)
		O:	13(C), 15(C), 31(C,Po)		
	B	T:	1(C), 13(C), 21(P), 22(C), 27(C), 29(C), 30(C), 38(C), 75(C), 100(C)	T:	1(C), 22(C), 100(C)
		LM:	13(C), 15(C), 25(C), 26(C), 31(C,Po), 38(C)	LM:	26(C)
		O:	13(C), 31(C,Po)		
M-2	A	T:	1(C), 21(C,P), 22(Po), 27(C), 29(C), 38(C), 41(C), 75(C)	T:	1(C), 8(C)
		LM:	13(C), 25(C), 26(C), 31(C,Po)		
		O:	13(C), 15(C), 31(C,Po)		
	B	T:	1(C), 21(P), 22(Po), 24(C), 27(C), 29(C), 38(C), 75(C)	T:	1(C)
		LM:	13(C), 25(C), 26(C), 31(C,Po)		
		O:	13(C), 15(C), 31(C,Po)		

Table 1. Cont'd.

Statistical fishing district	Geographic area		Spawning area		Nursery area
M-2	C	T:	1(C), 21(C,P), 22, 27(C), 29(C), 75(C)	T:	1(C)
		LM:	13(C), 25(C), 26(C), 31(C,Po), 38(C)		
		O:	13(C), 15(C), 31(C,Po)		
	D	T:	1(C), 21(C,P), 24(C), 27(C), 38(C), 75(C)	T:	1(C)
		LM:	13(C), 25(C), 26(C), 31(C,Po)		
		O:	13(C), 15(C), 31(C,Po)		
M-3	A	T:	1(C), 21(P), 22(Po), 27(C), 38(C), 75(C)	T:	1(C)
		LM:	13(C), 25(C), 26(C), 31(C,Po)	LM:	13(C)
		O:	13(C), 15(C), 20, 31(C,Po)		
		LO:	31(C)		
	B	T:	1(C), 21(P), 22(Po), 27(C), 38(C), 75(C)	T:	1(C)
		LM:	13(C), 25(C), 26(C), 31(C,Po)	LM:	13(C), 31(C)
		O:	13(C), 15(C), 31(C,Po)		
	C	T:	1(C), 2[4/], 21(C,P), 27(C), 30(C), 38(C), 75(C), 100(Po), 130(C)	T:	1(C), 13(C)
		LM:	13(C), 14(C), 25(C), 26(C), 31(C,Po), 38(C), 126(C)	LM:	13(C), 14(C), 26(C), 126(C), 130(C)
		O:	13(C), 15(C), 31(C,Po)		

Table 1. Cont'd.

Statistical fishing district	Geographic area		Spawning area		Nursery area
Wisconsin	A	T:	1(C), 24(C), 27(C), 29(C), 38(C), 41(C), 42(C), 46(C), 75(C), 76(C), 81(C), 84(C), 100(C), 130(C)	T:	1(C), 38(C), 130(C)
		LM:	8(C), 13(C), 14(C), 38(C), 41(C), 42(C), 46(C), 52(C), 58(Po), 87(P), 90(C), 95(C), 99(C), 116(C), 126(C)	LM:	8(C), 14(C), 38(C), 41(C), 52(C), 75(C), 76(C), 81(C), 84(C), 87(C), 126(C), 130(C)
	B	T:	1(C), 21(C), 22(C), 24(C), 27(C), 29(C), 30(C), 38(C), 41(C), 76(C)	T:	1(C), 24(C), 76(C)
		LM:	13(C), 14(C), 41(C), 126(C)	LM:	76(C)
	C	T:	1(C), 22(C,Po), 27(C), 29(C), 30(C), 113(C)	T:	1(C), 113(C)
		LM:	13(C), 14(C), 31(C), 41(C), 46(C), 113(C), 126(C)	LM:	113(C)
		O:	13(C), LT(C)	O:	13(C)
		LO:	14(C), 31(C)		
	D	T:	1(C), 21(C), 22(C), 27(C), 29(C), 30(C), 41(C), 46(C), 75(C)	T:	1(C)
		LM:	2, 13(C), 14(C), 26(C), 31(C)		
		O:	13(C), 14(C), 15(C), 17(C), 31(C), 100(P), 105(C), 138(C)	O:	13(C), 26(C), 31(C), 38(C), 100(C), 138
		LO:	13(C), 14(C), 26(C), 31(C), 38(C), 41(C), 75(C), 76(C), 105(C)	LO:	13(C), 31(C), 38(C)
	E	T:	1(C), 2(C), 21(C), 22(C), 27(C), 29(C), 30(C), 38(C), 41(C), 46(C), 75(C), 76(C), 100(C), 130(C)	T:	1(C), 113(C)

Table 1. Cont'd.

Statistical fishing district	Geographic area		Spawning area		Nursery area
Wisconsin	E (Cont'd.)	LM:	8, 13(C), 14(C), 31(C), 38(C), 41(C), 46(C), 100(C), 113(C), 126(C)	LM:	8(C), 126(C), 130(C)
		O:	13(C), 14(C)		
		LO:	14(C), 26(C), 31(C), 113(C)		
MS-1		T:	75(C)		
				LM:	75(C)
	A	T:	1(C), 27(C), 30(C)	T:	1(C)
		O:	31(C)		
		LO:	14(C), 26(C), 31(C)	LO:	13[5/](C), 14(C), 26(C)
	B	LO:	26(C), 31(C)	LO:	14(C), 26(C)
	C	O:	31(C)		
		LO:	14(C), 26(C), 31(C)	LO:	13[5/](C), 14(C), 26(C)
	D	LO:	26(C)	LO:	14(C), 26(C)
	E	T:	30(C), 67(P)	T:	67(C)
		LM:	67(P)	LM:	38(C), 67(C)
		O:	13[5/](C), 31(C)	O:	25(C)
		LO:	13[5/](C), 14(C), 26(C), 31(C)	LO:	14(C), 26(C)
MS-2	A	T:	22(C), 27(C), 30(C)		
		LM:	31(C)		
	B	T:	1(C), 21(C), 22(C), 27(C)	T:	1(C)
		LM:	31(C)		
		O:	31(C)		

Table 1. Cont'd.

Statistical fishing district	Geographic area		Spawning area		Nursery area
MS-2	C	T:	1(C), 22(C), 27(C)	T:	1(C), 22(C), 27(C)
		LM:	31(C)		
		O:	13[5]/(C), 31(C)		
	D	T:	1(C), 21(C), 22(C), 27(C), 29(C), 38(C), 130(C)	T:	1(C)
		LM:	13[5]/(C), 31(C)		
		O:	13[5]/(C), 36(C)		
	E	T:	1(C), 21(C), 22(C), 27(C), 38(C)	T:	1(C)
		LM:	13[5]/(C), 31(C)		
		O:	31(C), 36(C)		
MS-3		T:	130(P)		
	A	T:	1(C), 21(C), 22(C), 27(C)	T:	1(C)
		LM:	13[5]/(C), 14(C), 31(C)		
		O:	31(C)		
	B	T:	1(C), 21(C), 27(C)	T:	1(C), 27(C)
		LM:	14(C), 31(C)		
	C	T:	21(C), 22(C), 27(C)	T:	27(C)
		LM:	13[5]/(C), 31(C)		
		O:	31(C)		
	D	T:	1(C), 21(C), 27(C)	T:	1(C)
		LM:	14(C), 26(C), 31(C)		
		O:	26(C), 31(C)		
		LO:	13[5]/(C), 14(C), 26(C), 31(C)		

Table 1. Cont'd.

Statistical fishing district	Geographic area		Spawning area		Nursery area
MS-3	E	T:	1(C), 21(C), 27(C)	T:	1(C)
		LM:	13[5]/(C), 14(C), 31(C)		
		O:	14(C), 31(C), 36(C)		
	F	T:	1(C), 2[5]/(C), 21(C), 22(C), 27(C), 38(C), 87(C), 100(C), 130(C)	T:	1(C), 22(C)
		LM:	13[5]/(C), 14(C), 26(C), 31(C), 41(C), 100(C), 126(C)		
		O:	13[5]/(C), 14(C), 26(C), 31(C), 36(C), 41(C), 99(C), 100(C), 126(C)	O:	25(C), 31(C)
		LO:	14(C), 31(C)		
	G	T:	1(C), 2[5]/(C), 21(C), 22(C), 24(C), 27(C), 30(C), 31(C), 38(C), 75(C), 130(P)	T:	1(C), 22(C), 27(C)
		LM:	14(C), 31(C)	LM:	14(C)
		O:	14(C), 31(C), 36(C)		
		LO:	14(C), 31(C)		
MS-4	A	T:	1(C), 21(C), 22(C), 27(C), 30(C), 126(C), 130(C)	T:	1(C), 27(C), 126(C)
		LM:	14(C), 31(C)		
		O:	13(C), 14(C), 31(C)		
	B	T:	1(C), 21(C), 22(C), 24(C), 27(C), 29, 30(C), 38(C), 41(C), 46(C), 75(C), 76(C), 100(C), 102, 113(P), 126(C)	T:	1(C), 76(C), 113(C)
		LM:	14(C), 26(P), 29(P), 31(C), 32(P), 38(C), 100(C), 105(C), 107, 113(P), 126(C), 135(C), 136(C), 137(P), 138(P)	LM:	13[5]/(C), 14(C), 26(C), 31(C), 38(C), 41(C), 76(C), 100(C),

Table 1. Cont'd.

Statistical fishing district	Geographic area	Spawning area	Nursery area
MS-4	B (Cont'd.)		LM: 105(C), 113, 126(C), 135(C), 136(C), 137(C), 138(C)
		O: 13[5]/(C), 15[5]/, 17[5]/(C), 20[6]/(C), 31(C)	
		LO: 14(C), 31(C)	
	C	T: 1(C), 21(C), 22(C), 27(C), 30(C)	T: 1(C)
		LM: 14(C,P), 31(C)	
		O: 20, 25(P), 31(C)	O: 25(C), 31(C)
	D	T: 1(C), 21(C), 22(C), 24(C), 27(C), 29(C), 30(C), 38(C)	T: 1(C), 22(C), 24(C), 27(C)
		LM: 14(C,P), 31(C)	
		O: 31(C)	
		LO: 14(C)	
MS-5	A	T: 1(C), 21(C), 22(C), 27(C)	T: 1(C), 27(C)
		LM: 14(C), 31(C)	
		O: 31(C)	
	B	T: 1(C), 21(C), 22(C), 27(C), 38(C)	T: 1(C)
		LM: 13[5]/(C), 14(C), 31(C)	
		O: 18[6]/(C), 20[6]/(C), 31(C), 36(C)	
		LO: 31(C)	
	C	T: 1(C), 21(C), 22(C), 26(C), 27(C), 30(C), 38(C)	T: 1(C)
		LM: 14(C), 26(C), 31(C), 38(C)	

Table 1. Cont'd.

Statistical fishing district	Geographic area	Spawning area		Nursery area	
MS-6	A	LM:	14(C), 31(C), 41(P), 136(C)	LM:	13[5]/(C), 14(C)
	B	T:	1(C), 2(C), 21(C), 27(C), 38(C,P), 126(P), 130(P)	T:	1(C)
		LM:	31(C), 38(P)		
		O:	31(C)		
	C	T:	1(C), 21(C), 22(C), 24(C), 27(C), 29(C), 30(C), 38(C,P), 75(C), 76(C), 130(P)	T:	1(C)
		LM:	13[5]/(C), 14(C), 31(C), 38(P), 126(C)		
		O:	13[5]/(C), 31(C)		
OS-1	A	T:	1(C), 27(C)	T:	1(C)
	B	T:	1(C), 21(C), 22(C), 27(C), 30(C), 38(C), 130	T:	1(C)
		LM:	26(P), 31(C)	LM:	26
		O:	13(C), 19(P)		
		LO:	31(C)		
	C	LM:	31(C)		
		LO:	31(C)		
OS-2		T:	38(C)		
		LM:	14(C)		
	A	T:	27(C)		
				LM:	13(C)
		O:	13(C)	O:	13(C)
	B	T:	1(C), 21(C), 27(C), 30(C), 130(C)		

Table 1. Cont'd.

Statistical fishing district	Geographic area		Spawning area		Nursery area
OS-2	B (Cont'd.)	LM:	31(C), 126(C), 130(C)	LM:	13(C)
		O:	13(C)	O:	13(C)
		LO:	31(C)		
OS-3	A	T:	1(C), 21(C), 27(C), 41(C), 87(C), 130(C)	T:	1(C)
		LM:	31(C)		
		O:	18(C), 31(C)		
		LO:	31(C)		
	B	T:	1(C), 21(C), 22(C), 26(P), 27(C), 30(C), 75(C), 76(C), 130(C)	T:	1(C)
		LM:	14(C), 31(C)	LM:	26(C), 38(C)
		O:	31(C)	O:	38(C)
OS-4	A	LM:	31(C)		
		LO:	31(C)		
	B	T:	1(C), 27(C)		
		LM:	31(C)		
		O:	31(C)		
		LO:	31(C)		
	C	T:	27(C)		
		LM:	31(C)		
		O:	31(C)		
		LO:	31(C)		

Table 1. Cont'd.

Statistical fishing district	Geographic area	Spawning area	Nursery area
OS-4	D	LM: 31(C)	
		O: 31(C)	
		LO: 31(C)	
OS-5	A	T: 1(C), 21(C), 22(C), 27(C), 30(C)	T: 1(C)
		LM: 14(C), 31(C)	
		O: 31(C)	
		LO: 31(C)	
	B	T: 1(C), 21(C), 27(C), 30(C)	T: 1(C)
		LM: 31(C)	
		O: 31(C,P)	
		LO: 31(C,P)	
	C	T: 1(C), 2(C), 21(C), 27(C), 31(C)	T: 1(C)
		LM: 31(C)	
		O: 31(C)	
OS-6	A	T: 27(C), 31(C)	
		LM: 31(C)	
		O: 31(C)	
		LO: 31(C)	
	B	T: 27(C), 31(C)	
		LM: 31(C)	
		O: 31(C)	
		LO: 31(C)	

Table 1. Cont'd.

Statistical fishing district	Geographic area	Spawning area	Nursery area
OS-6	C	T: 26(P), 27(C), 31(C)	
		LM: 31(C)	
		O: 31(C)	
		LO: 31(C)	
	D	T: 1(C), 14(C), 21(C), 22(C), 24(C), 27(C), 29(C), 31(C)	T: 1(C)
		LM: 31(C)	
		O: 31(C)	
		LO: 31(C)	
OS-7	A	T: 1(C), 26(P), 27(C), LT(C) 38(C)	T: 1(C)
		LM: 14(C), 31(C)	
		O: 31(C)	
		LO: 31(C)	
	B	T: 1(C), 21(C), 22(C), 24(C), 27(C), 31(C), 38(C), 130	T: 1(C)
		LM: 14(C), 31(C)	
		O: 31(C)	
		LO: 31(C)	
	C	T: 2(C), 27(C), 31(Po), 38(C)	T: 2(C)
		LM: 31(C)	
		LO: 31(C)	
	D	T: 1(C), 24(C), 27(C), 31(Po), 38(C), 58(C), 75(C), 76(C), 88(C), 130	T: 1(C), 27(C)

Table 1. Cont'd.

Statistical fishing district	Geographic area	Spawning area	Nursery area
OS-7	D (Cont'd.)	LM: 14(C), 31(C), 58(C)	
		O: 31(C)	
		LO: 14(C), 31(C)	
	E	T: 1(C), 27(C), 38(C), 76(C), 88(C), 130(C)	T: 1(C)
		LM: 14(C), 31(C)	
		O: 31(C), 100(C)	
		LO: 14(C), 31(C)	

1/ Numerical species code according to Table 12.

2/ Spawning or nursery grounds are classified as confirmed (C), probable (P), or potential (Po); see text for definitions. When information was not available to unequivocally support the assignment of one of the classifications, no classification was given.

3/ Waters within the geographic area are classified as tributary (T), littoral mainland (LM), offshore (O), or littoral offshore (LO); see text for definitions.

4/ Species listed by State of Minnesota as "rare and protected."

5/ Species listed by State of Michigan as "threatened."

6/ Species listed by State of Michigan as "endangered."

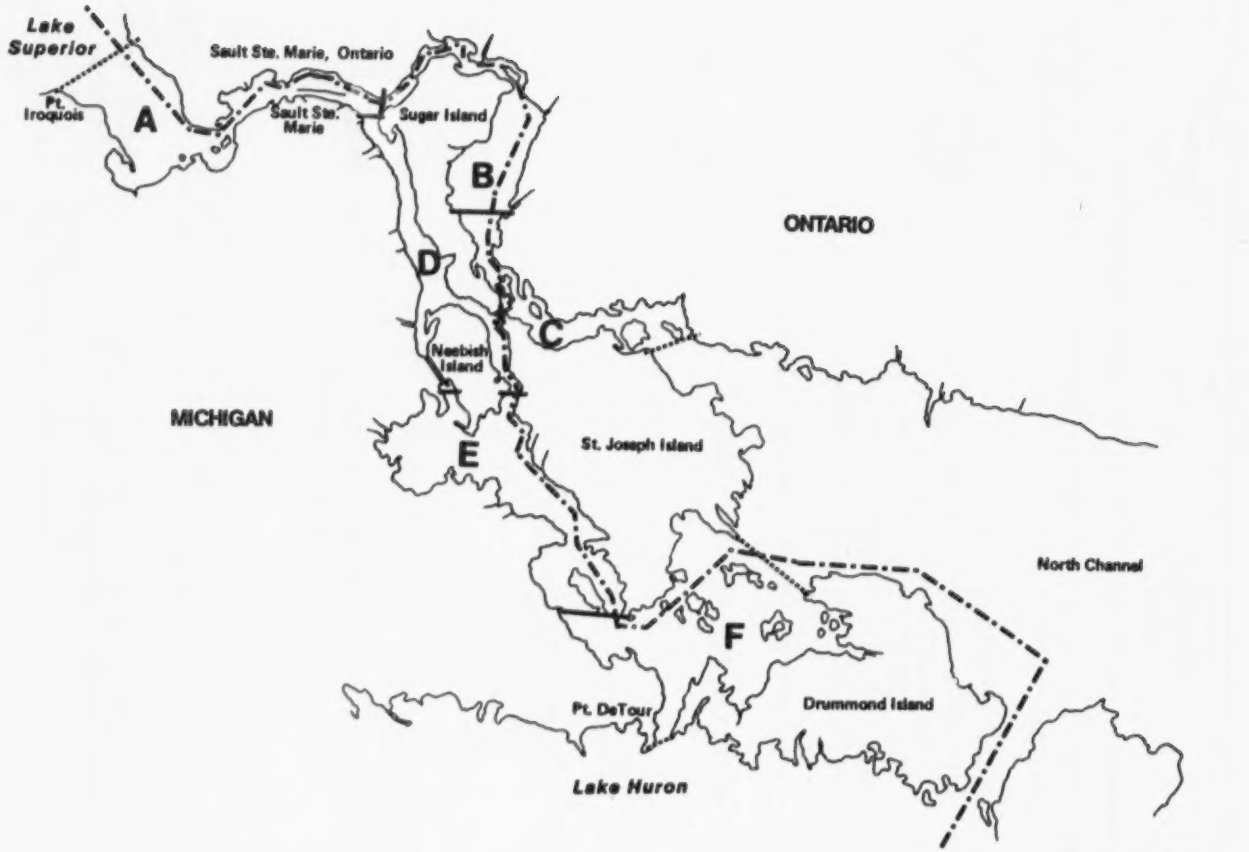

Lake Superior
Sault Ste. Marie, Ontario
Pt. Iroquois
A
Sault Ste. Marie
Sugar Island
B
ONTARIO
D
C
Neebish Island
MICHIGAN
E
St. Joseph Island
North Channel
F
Pt. DeTour
Drummond Island
Lake Huron
ST. MARYS RIVER
International Boundary
State Boundary
Statistical Fishing District
Geographic area

Table 2. Fishes[1] with spawning or nursery areas[2] in tributary, littoral or navigation channel waters[3] of the St. Marys River.

Geographic area	Spawning area	Nursery area
A	T: 1(C), 22(C), 27(C), 30(C), 38(Po), 75(Po), 76(C), 136	T: 1(C), 22(C), 30(C), 76(C)
	L: 1(C), 2[4](C), 8, 14(C,Po), 21(P,Po), 22(Po), 24(P,Po), 26, 27(C), 30(C), 38(C), 41(C,Po), 52(C), 58(C), 62, 63(C), 75, 99, 100, 108(Po), 113(Po), 125(C), 126(C,Po), 127, 130(C), 136(C)	L: 1(C), 27(C), 58(C), 76(C), 126(C)
B	T: 1(C), 27(C), 38(C), 76(C), 130(C)	T: 1(C)
	L: 41(C,P), 46, 125(C), 126(P)	L: 1(C), 41(C), 70(C), 86(C), 126(C)
C	T: 1(C), 27(C), 38(C)	T: 1(C)
	L: 31(C,Po), 41(P), 113(C), 126(C,P), 136(C)	
	N: 2[4](C)	
D	T: 76(C), 81(C), 84(C), 130(C)	
	L: 13[4](Po), 14(C,P,Po), 41(C), 46(C), 92(C,P), 100(C), 126(C)	L: 76(C)
	N: 41(Po)	
E	T: 1(C), 27(C), 38(C), 76(C,P), 81(C,Po), 130(P,Po)	T: 1(C)
	L: 13[4](Po), 14(P,Po), 37(C), 46, 113(Po), 130(C,P)	L: 92(C), 107(C), 110(C)

Table 2. Cont'd.

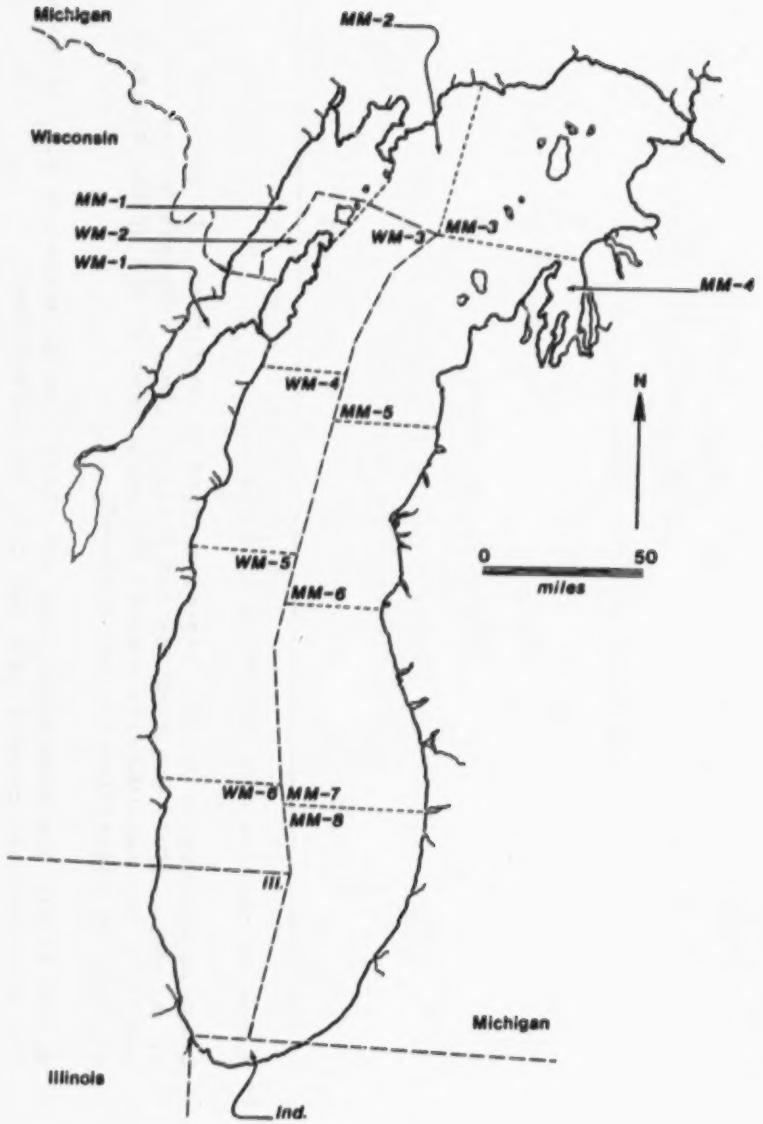
Geographic area	Spawning area	Nursery area
F	T: 1(C), 38(C), 41(C), 76(C)	T: 1(C)
	L: 14(C), 130	L: 1(C), 14(C), 38(C), 58(C), 76(C), 92(C), 99(C), 107(C), 126(C)

1/ Numerical species code according to Table 12.

2/ Spawning or nursery grounds are classified as confirmed (C), probable (P), or potential (Po); see text for definitions. When information was not available to unequivocally support the assignment of one of the classifications, no classification was assigned.

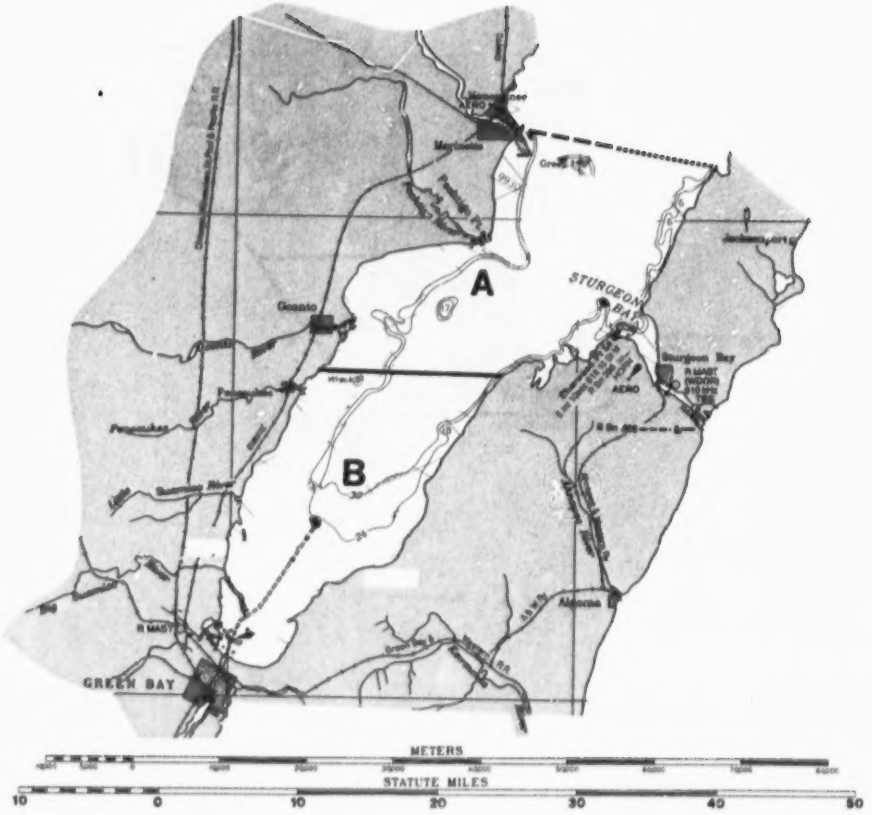
3/ Waters within the geographic area are classified as tributary (T), littoral (L) or navigation channel (N); see text for definitions.

4/ Species listed by State of Michigan as "threatened".

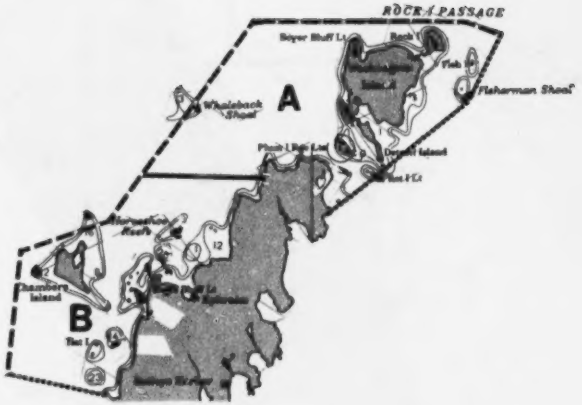


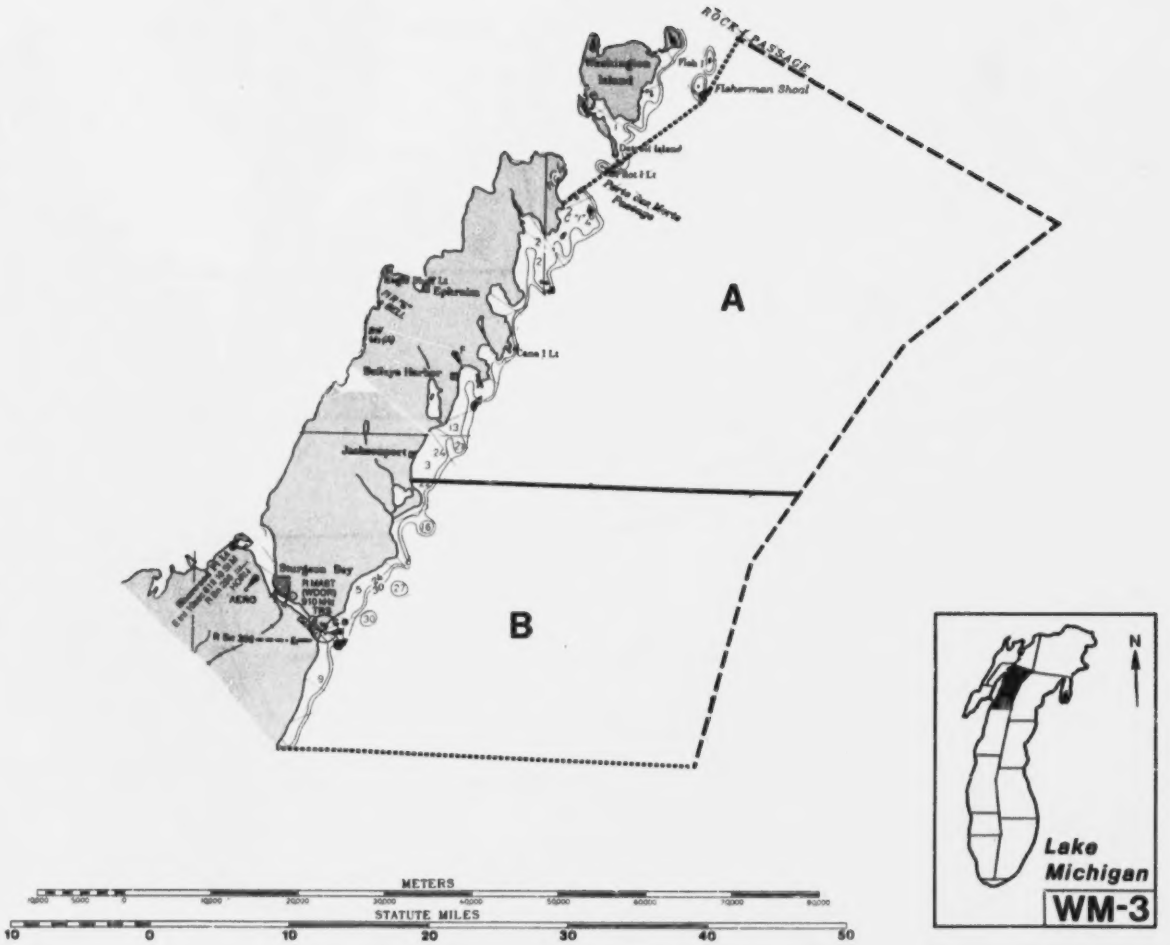
LAKE MICHIGAN

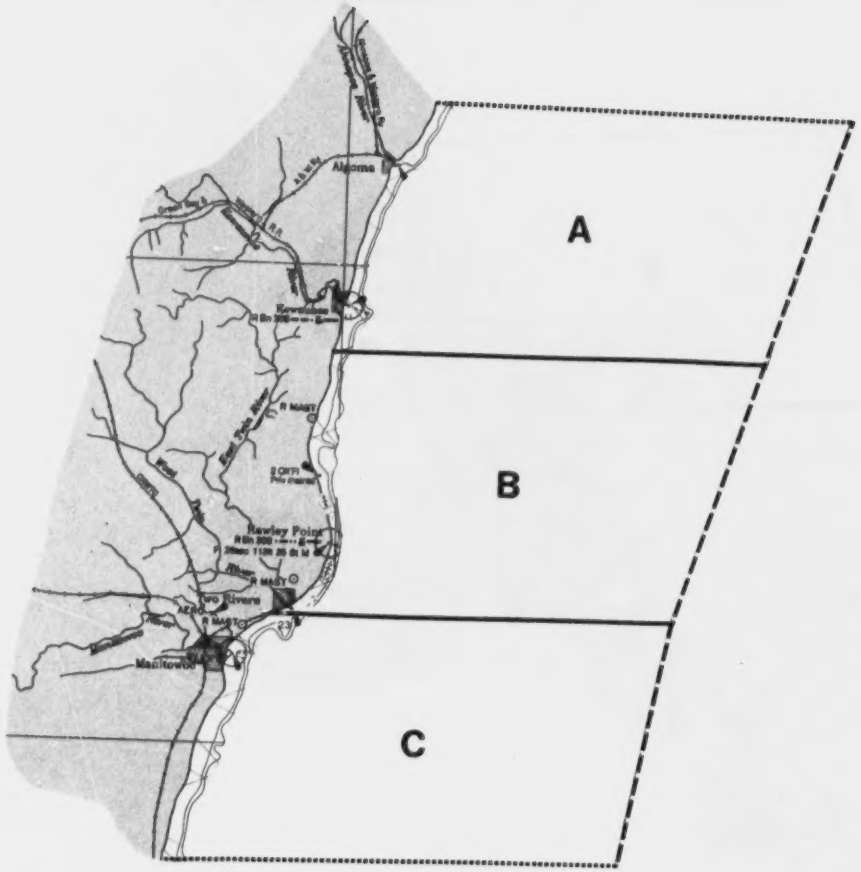
International Boundary
State Boundary
Statistical Fishing District
Geographic area


A
B
STURGEON BAY
GREEN BAY
Menominee
Marinette
Oconto
Peshtigo
Pensaukee
Algoma
Sturgeon Bay
AERO
METERS
STATUTE MILES
10
0
10
20
30
40
50

N
Lake
Michigan
WM-1

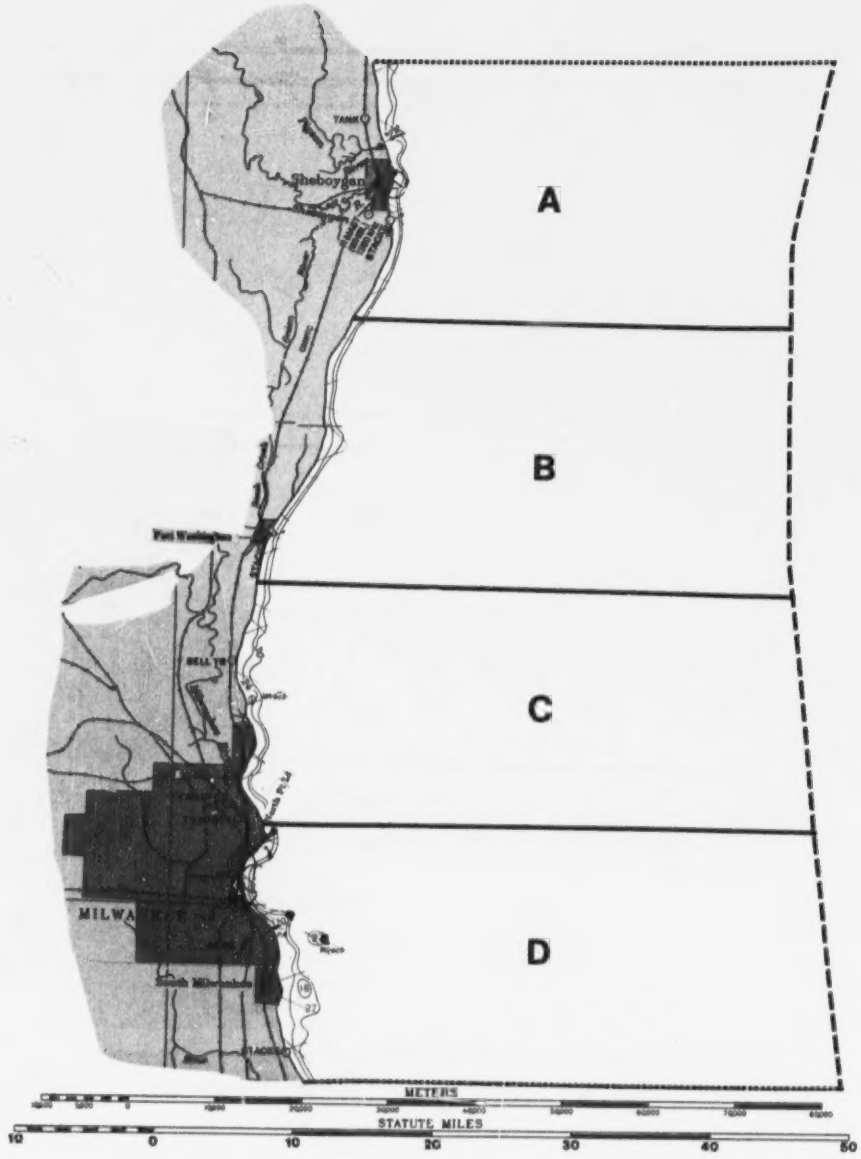

ROCK / PASSAGE
A
B
Whaleback Shoal
Fisherman Shoal
Plum Island
Pilot Island
Rock
Pt.
Pt.
Pt.


ROCK PASSAGE
Fisherman Shoal
A
B
Sturgeon Bay
METERS
STATUTE MILES
10 0 10 20 30 40 50
N
Lake Michigan
WM-3

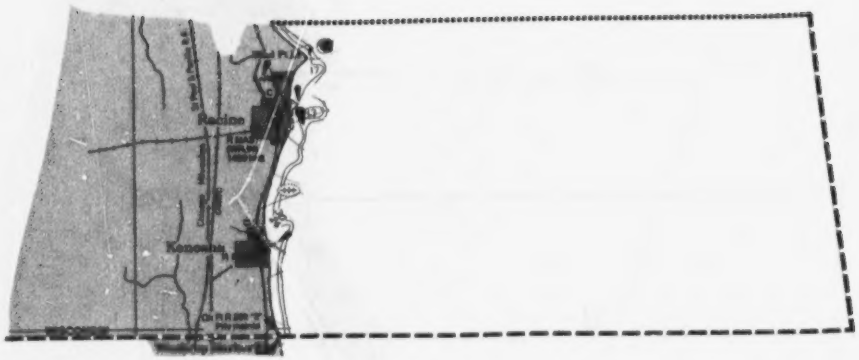

A
B
C
Algoma
Kewaunee
Rawley Point
Two Rivers
Manitowoc

METERS
STATUTE MILES
10
0
10
20
30
40
50

N
Lake
Michigan
WM-4


A
B
C
D
Sheboygan
METERS
STATUTE MILES
10
0
10
20
30
40
50

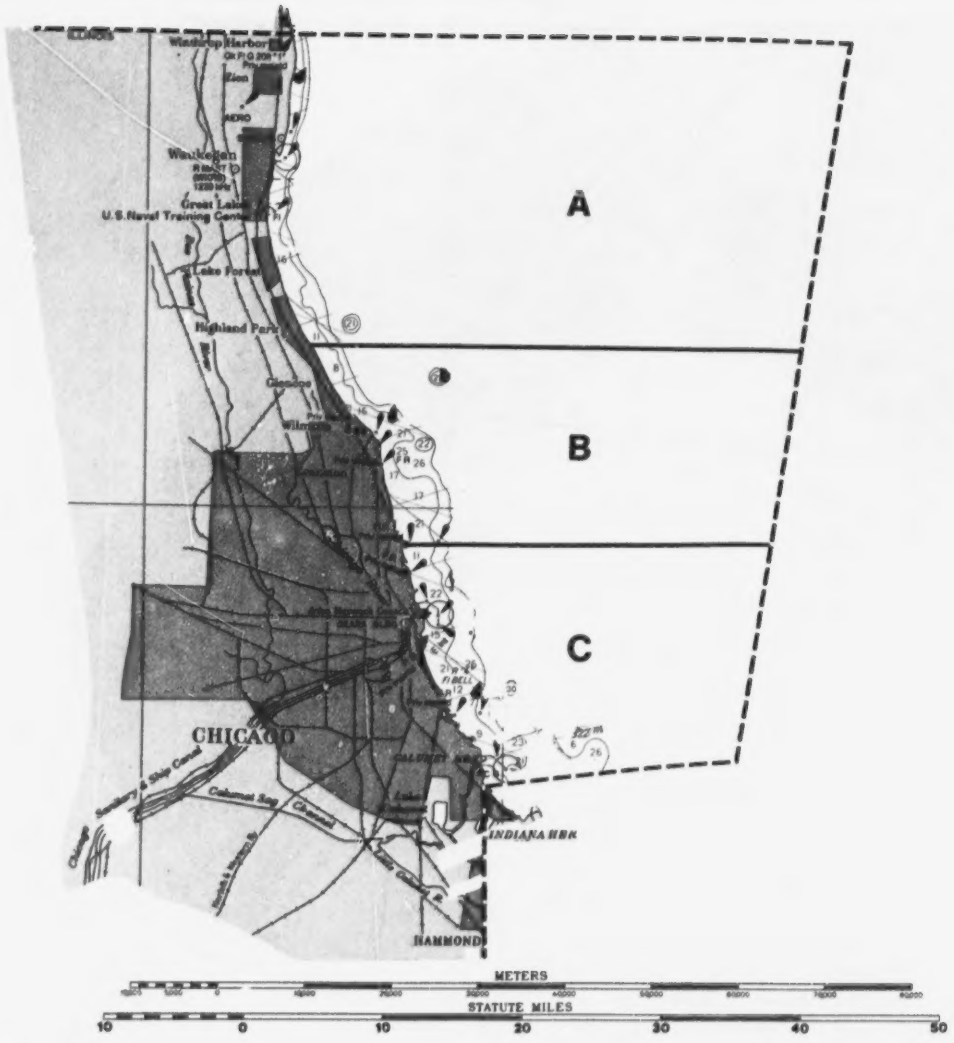
N
Lake
Michigan
WM-5



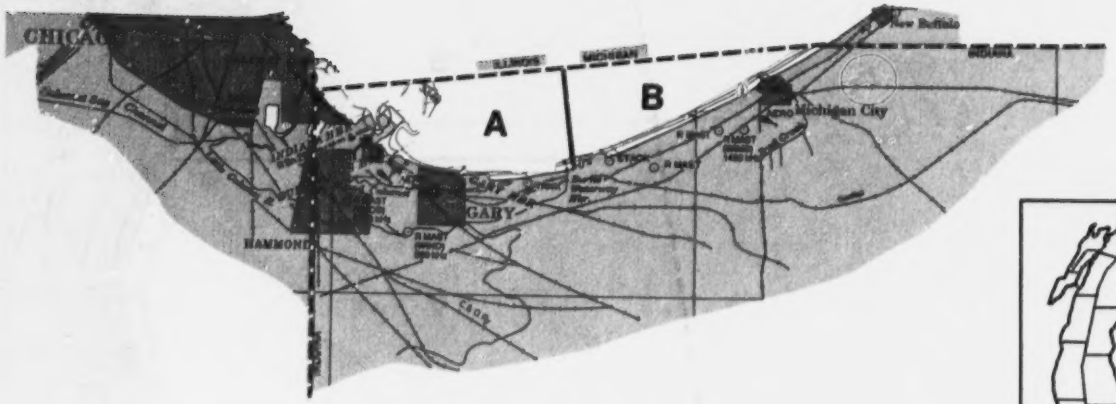
METERS

STATUTE MILES

10 0 10 20 30 40 50

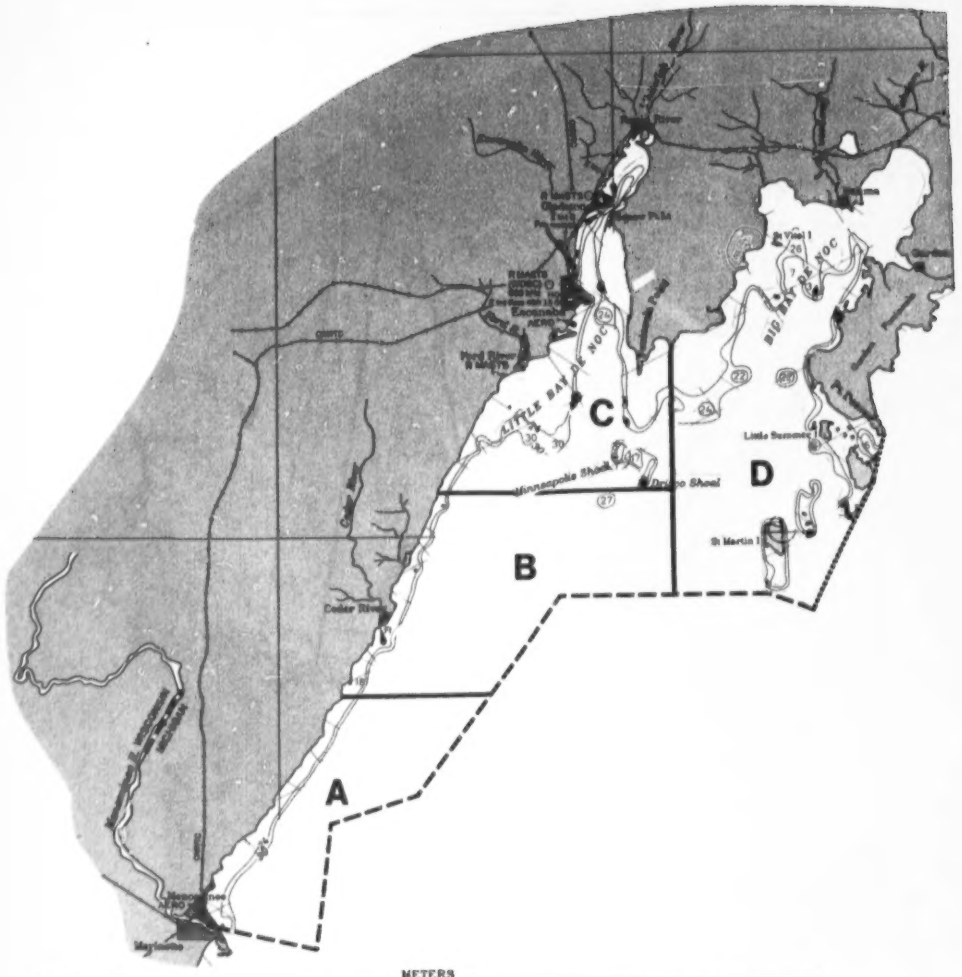

A
B
C
CHICAGO
Waukegan
Highland Park
Glenview
Wilmette
INDIANA HBR
HAMMOND
METERS
STATUTE MILES
10
0
10
20
30
40
50

N
Lake
Michigan
ILL.


A
B
GARY
HAMMOND
New Buffalo
Lake Michigan

METERS
STATUTE MILES
10
0
10
20
30
40
50

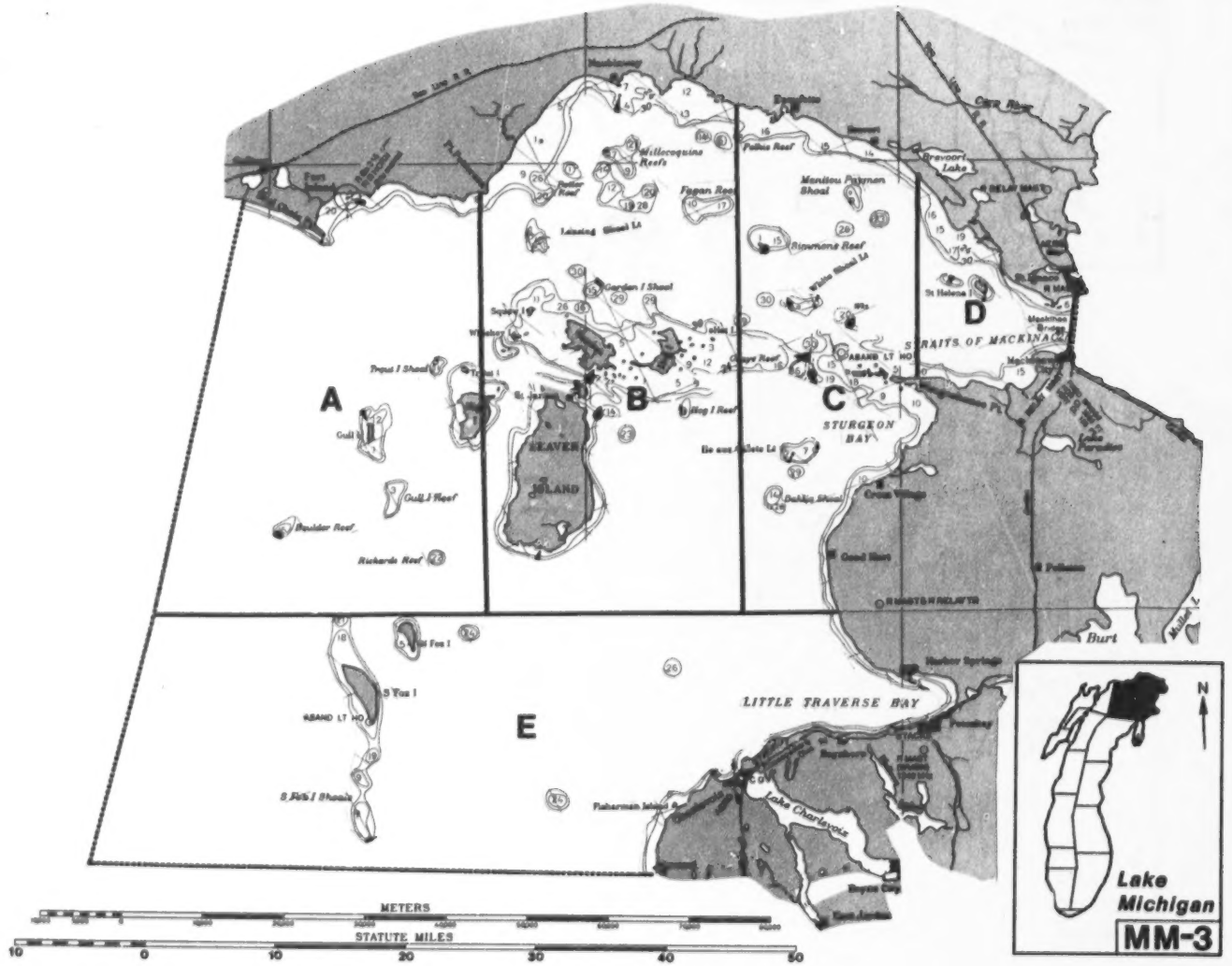
N
Lake
Michigan
IND.

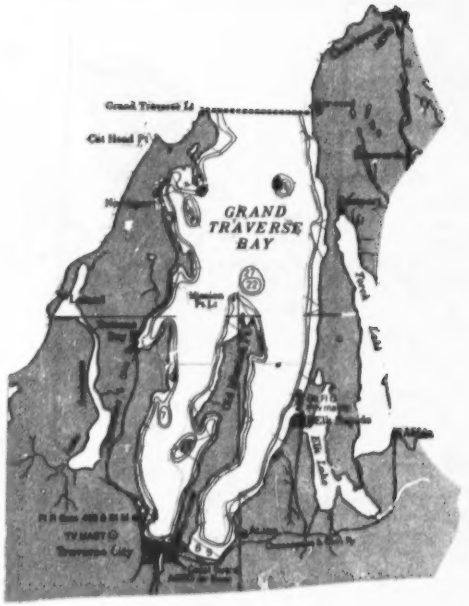

A
B
C
D
METERS
STATUTE MILES
10
0
10
20
30
40
50

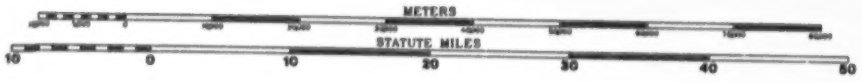
N
Lake
Michigan
MM-1

Indian Lake
A
B
ST MARTINS PASSAGE
METERS
STATUTE MILES
10
0
10
20
30
40
50

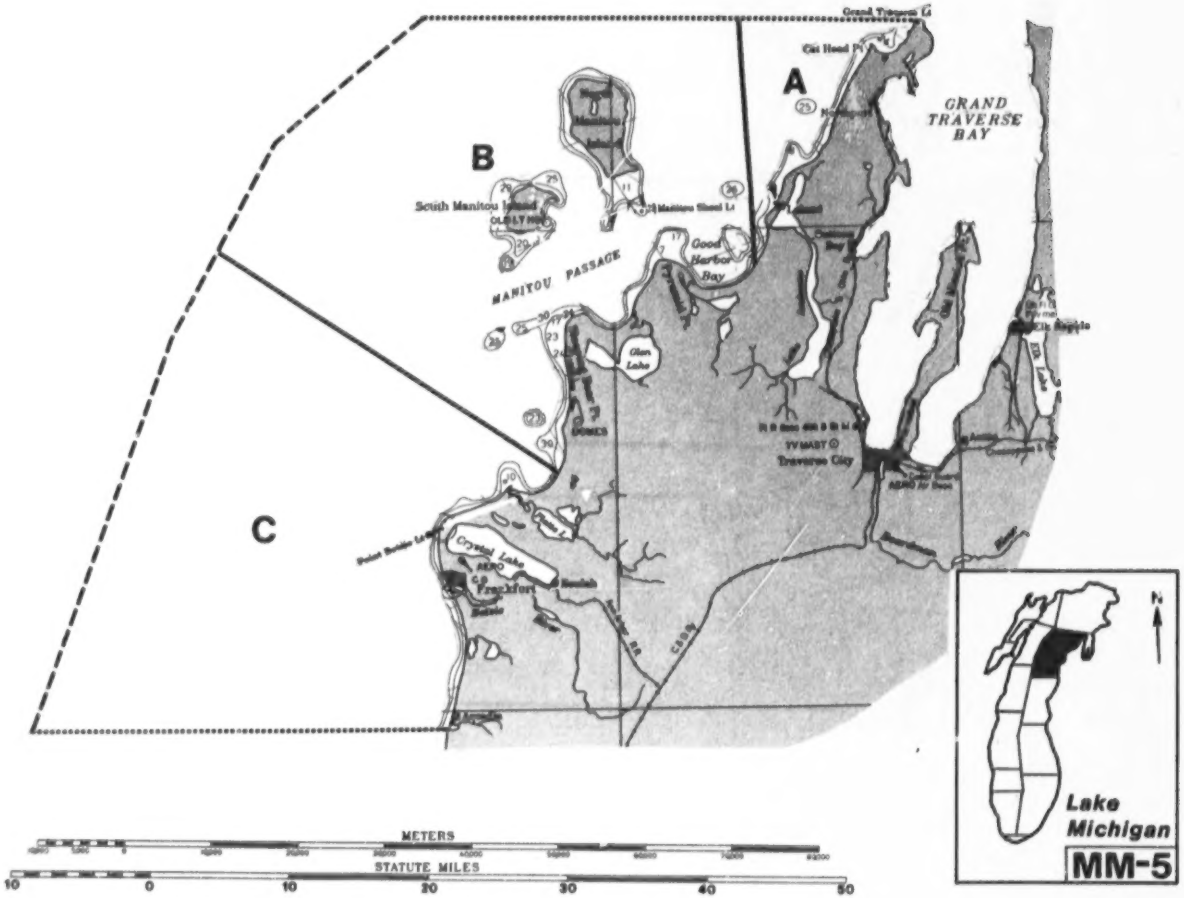
N
Lake Michigan
MM-2

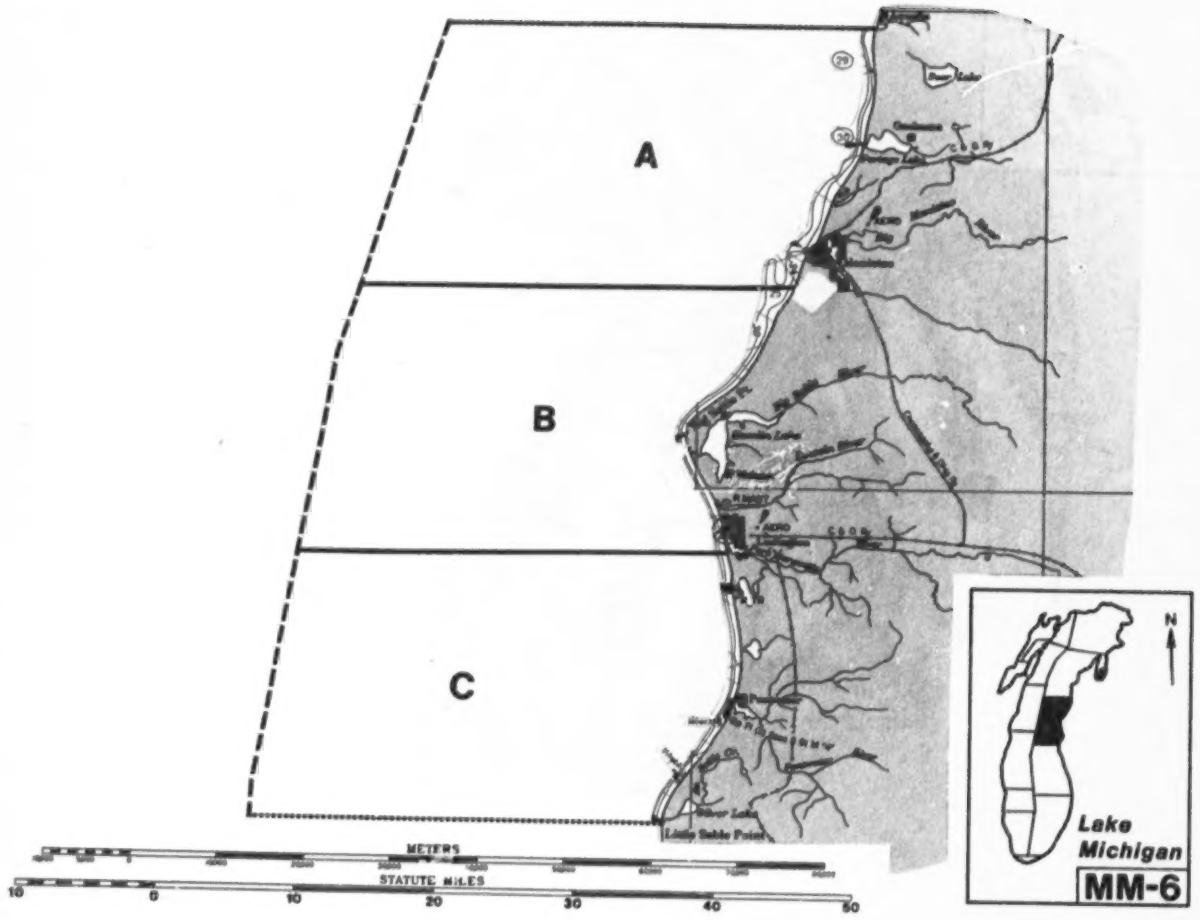

A
B
C
D
E
BEAVER ISLAND
STRAITS OF MACKINAC
STURGEON BAY
LITTLE TRAVERSE BAY
Lake Charlevoix
Burt
Trout I Shoal
Gull I Reef
Boulder Reef
Richards Reef
Gull Fox I
S Fox I
ABAND LT HO
S Fox I Shoals
Millecoquins Reefs
Fisherman Island
Fisherman Island Bay
Manitou Passage
Manitou Passage Shoal
Fishers Reef
Fisherman Island Reef
Squaw I
Garden I Shoal
Whiskey I
Trout I
Hog I Reef
Grave Reef
Dublin Shoal
Cross Village
Good Hart
Harbor Springs
Petoskey
Bay View
Boyne City
East Jordan
Brevoort Lake
St Helena I
Mackinac Bridge
Lake Michigan
N
METERS
STATUTE MILES
10 0 10 20 30 40 50
MM-3

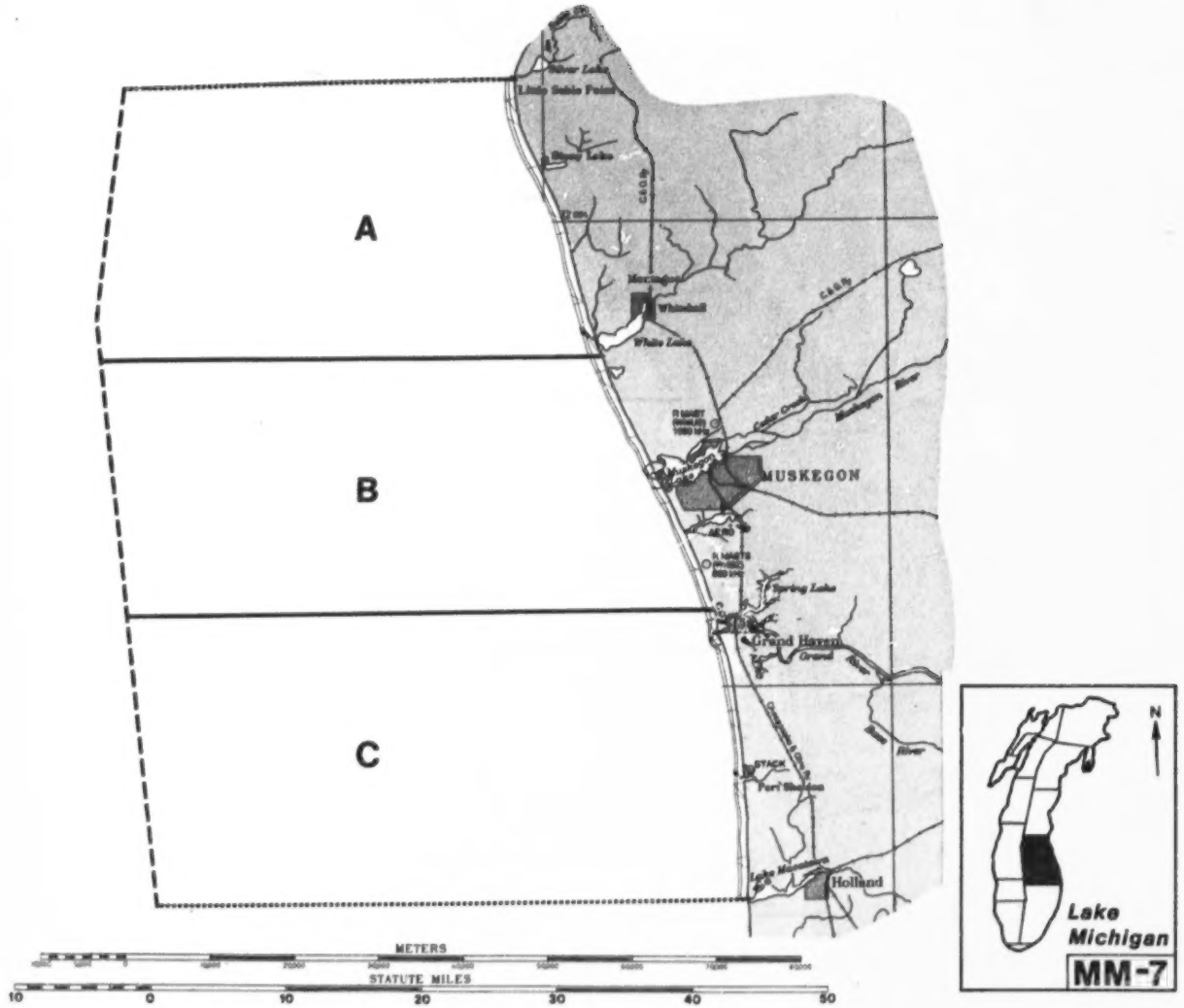

GRAND
TRAVERSE
BAY


METERS
STATUTE MILES
10
0
10
20
30
40
50

N
Lake
Michigan
MM-4


A
B
C
GRAND TRAVERSE BAY
MANITOU PASSAGE
South Manitou Island
Good Harbor Bay
Glen Lake
Traverse City
Crystal Lake
Frankfort
METERS
STATUTE MILES
10 0 10 20 30 40 50
Lake Michigan
MM-5


A
B
C
METERS
STATUTE MILES
10
0
10
20
30
40
50
N
Lake
Michigan
MM-6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B
C
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Grand Haven
Holland
METERS
STATUTE MILES
10
0
10
20
30
40
50
N
Lake Michigan
MM-7

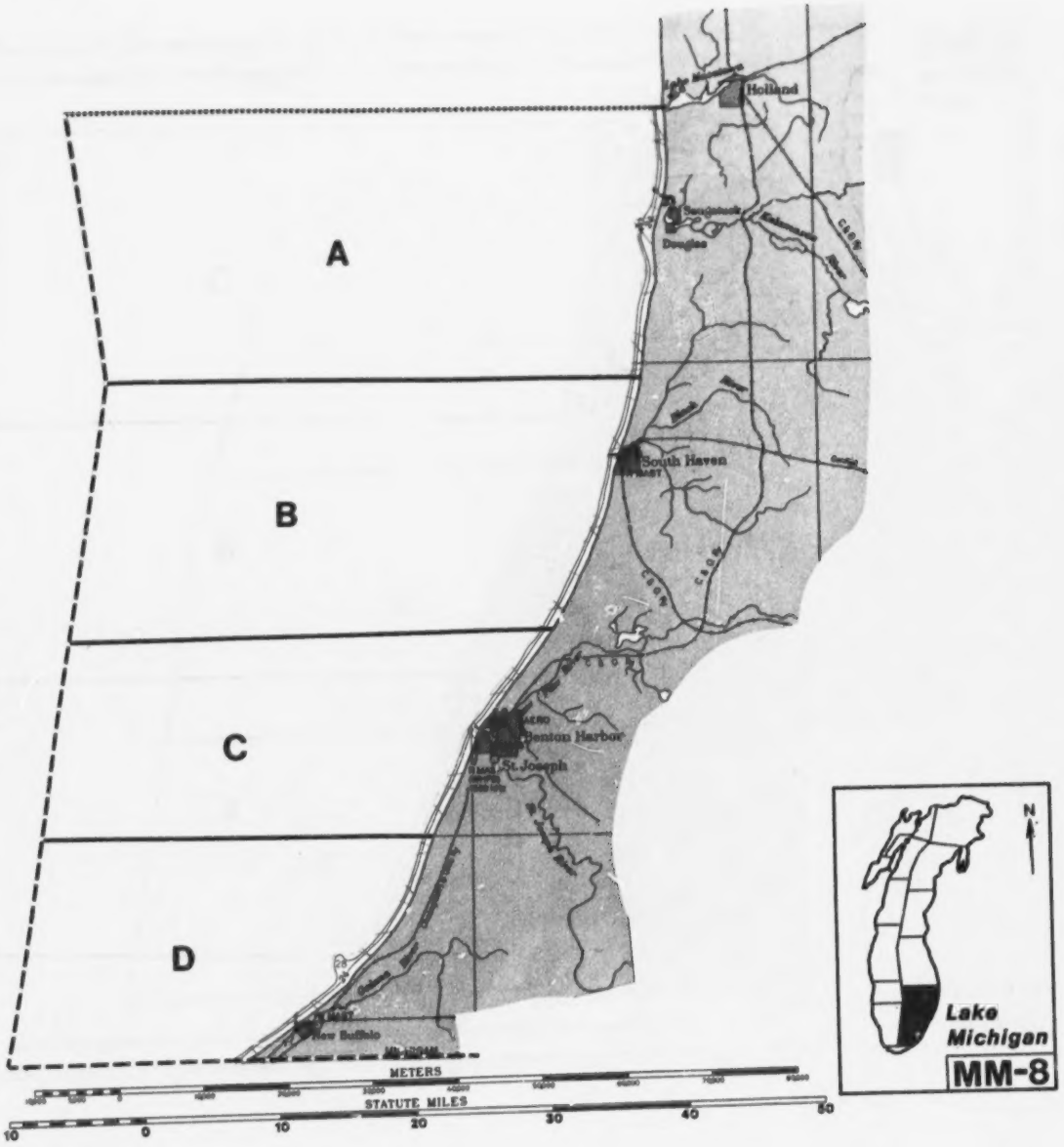

A
B
C
D
Holland
Douglas
South Haven
Benton Harbor
St. Joseph
New Buffalo
METERS
STATUTE MILES
10
0
10
20
30
40
50
N
Lake Michigan
MM-8

Table 3. Fishes[1] with spawning or nursery areas[2] in tributary, littoral mainland, offshore, or littoral offshore waters[3] of Lake Michigan.

Statistical fishing district	Geographic area	Spawning area	Nursery area
WM-1	A	T: 1(C), 2(C,Po), 6(C,P), 9(Po), 14(C), 21(C), 22(C), 24(C), 27(C), 29(C), 30(C), 38(C,P), 41(C), 46(P), 76(C), 83(Po), 84(Po), 113(C), 126(C), 130(C)	T: 1(C), 6(P), 41(C), 76(P)
		LM: 6(C,P), 8(C,Po), 13(C), 14(C), 31(C), 38(Po), 41(P), 42(C), 46(C,P), 58(P), 76(C), 90(P), 110(P), 113(C), 126(C,P), 129(C), 130(C)	LM: 6(P), 8(C), 38(C), 41(C), 46(C), 58(P), 76(C), 113(C), 126(C)
		LO: 13(C), 14(C), 31(C), 100(C)	
		O: 19(C)	
	B	T: 1(C), 2(C), 8(C), 9(P,Po), 22(C), 24(C), 27(C), 29(C), 30(C), 38(C,P), 41(C), 46(C,P), 75(C), 76(C), 85(C), 87(C), 99(C), 100(C), 113(C), 126(C,P), 129(C), 130(C), 134(C)	T: 1(C), 8(C), 9(C), 41(C), 76(C,P), 87(C), 100(C), 107(C), 134(C)
		LM: 2(C), 8(C,Po), 38(Po), 41(C), 42(C), 58(P), 90(P), 93(C), 107(C), 113(C), 126(C,P), 129(C), 130(C), 134(C)	LM: 8(C), 9(C), 38(C), 41(C), 42(C), 46(C), 58(P), 76(C), 93(C), 107(C), 126(C), 130(C)
WM-2		LM: 29(C)	
	A	T: 9(Po), 30(C), 38(P)	
		LM: 8(C,Po), 13(C), 14(C), 31(C), 38(Po), 58(C,P), 100(C), 113(C), 126(C)	LM: 8(C), 38(C), 58(P), 113(C)

Table 3. Cont'd.

Statistical fishing district	Geographic area		Spawning area		Nursery area
WM-2	A (Cont'd.)	O:	13(C), 14(C), 15(P), 16(P), 19(C), 31(C), 100(C)	O:	13, 15(P)
		LO:	13(C), 14(C), 31(C), 41(C), 113(C), 126(C)		
	B	T:	1(C), 9(Po), 30(C), 38(C,P), 130(C)	T:	1(C)
		LM:	8(C,Po), 13(C), 14(C), 31(C), 38(Po), 58(C,P), 113(C)	LM:	8(C), 14(C), 38(C), 58(P), 113(C)
		O:	13(C), 15(P), 31(C)	O:	15(P)
		LO:	14(C,P), 31(C), 100(C), 113(C)	LO:	126(C)
WM-3		LM:	29(C)		
	A	T:	1(C), 6(C), 8(C), 22(C), 27(C), 38(C,P,Po), 41(C,Po), 45(Po), 75(C), 76(C), 87(Po), 113(C)	T:	1(C)
		LM:	6(C), 8(C,Po), 13(C,P), 14(C), 26(C), 29, 31(C), 38(Po), 41(C), 46(C), 58(C,P), 75(C), 76(C), 98(C), 113(C), 139(C)	LM:	8(C), 13(C), 14(C), 15(C), 26(C), 38(C), 41(C), 58(P), 113(C)
		O:	14(C), 15(P), 17(Po), 31(C,P)	O:	14(C), 15(P)
	B	T:	1(C), 22(C), 27(C), 38(C,P,Po), 41(C), 76(C), 87(C)	T:	1(C), 27(C)
		LM:	8(C,Po), 14(C), 26(P), 31(C,Po), 58(P), 87(Po)	LM:	8(C), 38(C), 58(P)
		O:	15(P), 17(Po), 31(C,P)		
		LO:	31(C)		

Table 3. Cont'd.

Statistical fishing district	Geographic area		Spawning area		Nursery area
WM-4	A	T:	1(C), 22(C), 24(C), 27(C), 29(C), 30(C), 38(C,P), 41(C), 42(P), 46(C), 76(C), 87(C)	T:	1(C), 22(C), 27(C)
		LM:	8(C,Po), 14(C), 31(C), 58(P), 126(C)	LM:	8(C), 38(C), 58(P)
		O:	15(P), 17(C,Po), 19(C), 31(C)	O:	15(P)
	B	T:	1(C), 8(C), 22(C), 24(C), 27(C), 29(C), 30(C), 38(C,P), 41(C), 45(P), 46(C), 75(P), 76(C), 84, 85(C), 126(C), 130	T:	1(C), 75(P)
		LM:	8(C,Po), 13(C), 14(C), 26(C), 31(Po), 38(C), 45(P,Po), 58(P), 67(C), 70(C), 75(P), 87(C), 105, 126(C), 136(P), 139(C)	LM:	8(C), 15(C), 38(C), 45(C), 46(C), 58(P), 67(C), 75(P), 87(C), 100(C), 126(C), 136(C), 139(C)
		O:	13(C), 15(P), 17(Po)	O:	15(P)
	C	T:	1(C), 22(C), 24(C), 27(C), 29(C), 38(C,P), 76(C), 84	T:	1(C)
		LM:	8(C,Po), 14(C), 31(C), 52(P), 58(C,P), 126(C), 139(C)	LM:	8(C), 38(C), 58(P), 139(C)
		O:	13(C), 15(P), 17(Po), 31(C)	O:	15(P)
		LO:	31(C)		
WM-5	A	T:	1(C), 22(C), 24(C), 27(C), 29(C), 38(C,P), 41(C), 45(C), 46(Po), 67(Po), 76(C), 87(C)	T:	1(C), 76(C)
		LM:	8(C,Po), 14(C), 37, 26(C), 31(Po), 38(C), 58(P), 67(C), 103, 126(C), 136(C,P), 139(P),	LM:	8(C), 15(C), 37(C), 38(C), 45(C), 58(P), 67(C), 100(C), 105(C), 126(C), 136(C), 138(C), 139(C)

Table 3. Cont'd.

Statistical fishing district	Geographic area		Spawning area		Nursery area
WM-5	A (Cont'd.)	O:	12[5]/(P), 13(C), 15(P), 17(C,Po), 19(C)	O:	15(P), 138(C), 139(C)
	B	T:	27(C), 29(C), 38(C,P), 45(C), 76(C)		
		LM:	8(C,Po), 13(C), 14(C), 31(P), 38(C), 58(P), 67(C), 105(C), 126(C), 136(P), 139(C)	LM:	8(C), 13, 15(C), 38(C), 58(P), 100, 105(C), 136(C), 138(C), 139(C)
		O:	13(C), 15(C,P), 17(Po), 19(C), 20(C), 37(C), 31(C,P)	O:	15(P), 138(C)
	C	T:	38(C,P), 76(C)		
		LM:	8(C,Po), 14(C), 31(C), 38(C), 45(C), 58(P), 126(C)	LM:	8(C), 38(C), 58(P)
		O:	13(C), 15(C,P), 17(Po), 20(C) 37(C), 31(C), 136(C)	O:	15(P), 136(C)
	D	T:	8(C), 22(C), 27(C), 38(C,P), 41(C), 44(C), 75(P), 87(C), 130(C)	T:	44(C)
		LM:	8(C,Po), 14(C), 31(C), 38(C), 45(C), 58(C,P), 67(C), 99(C), 105(C), 126(C), 136(P)	LM:	8(C), 38(C), 44(C), 58(P), 67(C), 139(C)
		O:	12[5]/, 13(C), 15(C,P), 17(Po), 19(C), 20(C), 37(C), 31(C), 136(C)	O:	15(P)
		LO:	31(C)		
WM-6		T:	8(C), 24(C), 27(C), 38(C,P), 76(C)		
		LM:	8(C,Po), 14(C), 31(C), 38(C), 58(P), 126(C)	LM:	8(C), 38(C), 58(P)

Table 3. Cont'd.

Statistical fishing district	Geographic area		Spawning area		Nursery area
WM-6	(Cont'd.)	O:	12[5]/(P), 15(C,P), 17(C,Po), 18(C), 19(C), 31(C)	O:	15(P)
		LO:	31(C)		
Ill.	A	T:	22(C), 24(C), 27(C), 29, 41(C), 76(C)		
		LM:	8(C,Po), 13, 38(C,Po), 44(P), 46(C,P), 52(C,P), 58(C,P), 64(C), 65(C), 67(C), 75(C), 76(C), 90(P), 99(C), 105(C), 109(Po), 112(P), 114(P), 126(C)	LM:	8(C), 14, 15(C), 38(C), 46(C), 52(C), 58(C,P), 64(C), 67(C), 76(C), 99(C), 100(C), 105(C), 110(C), 114(C), 126(C), 138(C)
		O:	8(C), 12[6]/(P), 15(P), 17(Po), 31(C,Po), 126(P), 136(C)	O:	8(C), 15(P), 136(C)
		LO:	31(C)		
	B	T:	22(C), 24(C)		
		LM:	8(C,Po), 31(P), 38(Po), 44(P), 46(P), 52(C,P), 58(P), 64(C), 65(C), 90(P), 108(Po), 109(Po), 112(P), 114(P), 115(Po), 116(Po), 126(C), 135(P)	LM:	8(C), 38(C), 58(P), 114(C), 126(C), 135(C)
		O:	8(C), 15(P), 17(Po), 31(C,Po), 126(P)	O:	15(P), 135(C)
	C	T:	2(P), 22(C), 24(C), 107(C), 118, 130(C)		
		LM:	2(C), 8(C,Po), 38(Po), 44(P), 46(P), 52(P), 58(P), 64(C), 65(C), 90(P), 108(Po), 109(Po), 112(P), 114(P), 115(Po), 116(Po), 126(C)	LM:	8(C), 38(C), 58(P), 114(C), 126(C)

Table 3. Cont'd.

Statistical fishing district	Geographic area		Spawning area		Nursery area
Ill.	C (Cont'd.)	O:	8(C), 15(P), 31(C,Po), 126(P)	O:	15(P)
Ind.		T:	89(C)		
	A	T:	1(C), 8(C), 22(C), 24(C), 27(C), 38(C), 46(C), 87(C)	T:	1(C)
		LM:	8(C,Po), 13(C), 14(C), 29(C), 31(C), 38(C), 46(C), 58(C,P), 99(C), 125(P), 126(C), 134(C), 136(C,P)	LM:	8(C), 38(C), 46(C), 58(C,P), 99(C), 125(C), 126(C), 136(C)
		O:	8(C), 13(C), 126(C)	O:	8(C)
	B	T:	8(C), 22(C), 24(C), 27(C), 29(C), 38(C), 46(C), 87(C), 93(C), 112(P)	T:	112(P)
		LM:	8(C,Po), 9(C), 13(C), 29(C), 31(C), 33(C), 38(C), 52(Po), 58(C,P), 70(C), 99(C), 126(C), 136(C)	LM:	8(C), 38(C), 46(C), 58(C,P), 70(C), 99(C), 125(C), 126(C), 132, 136(C)
		O:	8(C), 13(C), 14(C), 17(P), 19(C), 20(C), 31(C), 126(C), 138	O:	8(C), 138
MM-1	A	T:	1(C), 9(Po), 27(C,P), 38(C,P)	T:	1(C)
		LM:	8(C,Po), 13[4](C), 14(C), 31(C), 58(P), 113(C), 114(C), 126(C)	LM:	8(C), 38(C), 58(P)
		O:	8(C), 31(C)		
		LO:	14(C)		

Table 3. Cont'd.

Statistical fishing district	Geographic area		Spawning area		Nursery area
MM-1	B	T:	1(C), 9(Po), 14(C), 21(C), 22(C), 27(C), 38(C,P), 45(Po), 75(C), 76(C), 130(C)	T:	1(C)
		LM:	8(C,Po), 13[4]/(C), 31(C), 58(C,P), 70(C), 99(C), 113(C), 114(C), 126(C)	LM:	8(C), 14(C), 37(C), 38(C), 46(C), 54(C), 58(C,P), 67(C), 76(C), 100(C), 126(C), 130(C)
		O:	31(C)		
		LO:	31(C), 100(C)		
	C	T:	1(C), 9(Po), 14(C), 21(C), 22(C), 27(C), 29(C), 30(C), 31(C), 38(C,P), 41(C), 75(C), 76(C), 87(C), 99(C), 107(C), 126(C), 130(C)	T:	1(C), 76(C)
		LM:	8(C,Po), 13[4]/(C), 14(C), 31(C), 41(C), 58(C,P), 113(P), 126(C), 129(C), 130(C)	LM:	8(C), 14(C), 38(C), 46(C), 54(C), 58(C,P), 64(C), 67(C), 76(C), 99(C), 100(C), 105(C), 126(C)
		O:	13[4]/(C), 18[8]/(P), 31(C)		
		LO:	14(C), 31(C)		
	D	T:	1(C), 9(Po), 22(C), 27(C), 38(C,P), 75(C), 76(C), 99(C)	T:	1(C)
		LM:	8(C,Po), 14(C), 26(C), 31(C), 58(P), 113(P), 126(C), 129(C), 130(C)	LM:	8(C), 14(C), 38(C), 58(P)
		O:	13[4]/(C), 14(C), 31(C)		
		LO:	14(C), 31(C)		

Table 3. Cont'd.

Statistical fishing district	Geographic area		Spawning area		Nursery area
MM-2	A	T:	1(C), 38(P)	T:	1(C)
		LM:	8(C,Po), 14(C,P), 31(C), 58(P)	LM:	8(C), 14(P), 38(C), 58(P)
		O:	15[4]/(P), 17[4]/(Po)	O:	15[4]/(P)
		LO:	14(C), 31(C)		
	B	T:	1(C), 21(C), 22(C), 24(C), 27(C), 38(C,P)	T:	1(C)
		LM:	8(C,Po), 13[4]/(C), 14(C), 26(C), 31(C), 58(P), 87(C)	LM:	8(C), 38(C), 58(P)
		O:	12[7]/, 15[4]/(C,P), 17[4]/(Po), 19[8]/(C), 31(C)	O:	15[4]/(P)
		LO:	31(C)		
MM-3	A	T:	1(C), 38(P)	T:	1(C)
		LM:	8(C,Po), 13[4]/(C), 14(C), 26(C), 58(P)	LM:	8(C), 38(C), 58(P)
		O:	15[4]/(P), 17[4]/(Po), 37(C), 31(C)	O:	15[4]/(P)
		LO:	14(C), 31(C)		
	B	T:	1(C), 21(C), 22(C), 27(C), 38(C,P), 75(C), 76(C)	T:	1(C), 27(C)
		LM:	8(C,Po), 13[4]/(C), 14(C), 26(C), 31(C), 58(P), 87(C), 108(C), 113(C), 126(C)	LM:	8(C), 38(C), 58(P)
		O:	12[7]/(C), 14(C), 15[4]/(P), 17[4]/(Po), 31(C)	O:	15[4]/(P)
		LO:	14(C), 26(C), 31(C)		

Table 3. Cont'd.

Statistical fishing district	Geographic area		Spawning area		Nursery area
MM-3	C	T:	1(C), 21(C), 38(C,P)	T:	1(C)
		LM:	8(C,Po), 13[4]/(C), 14(C), 26(C), 31(C), 46(C), 54(C), 58(P), 87(C), 108(C), 113(C), 114(C), 126(C)	LM:	8(C), 38(C), 46(C), 54(C), 58(P)
		O:	15[4]/(P), 37(C), 38(C), 100(C)	O:	15[4]/(P)
		LO:	14(C), 26(C), 31(C), 100(C)		
	D	T:	1(C), 21(C), 22(C), 38(C,P), 45(C), 54(C), 67(C), 76(C), 113(C)	T:	1(C)
		LM:	8(C,Po), 14(C), 54(C), 58(P), 87(C), 108(C), 113(C)	LM:	8(C), 38(C), 54(C), 58(P)
		O:	15[4]/(P), 26(C)	O:	15[4]/(P)
		LO:	14(C), 26(C), 31(C)		
	E	T:	1(C), 21(C), 22(C), 24(C), 27(C), 28(C), 29(C), 38(C), 99(P)	T:	24(C), 27(C), 28(C)
		LM:	8(C,Po), 14(C), 31(C), 38(C), 58(P)	LM:	8(C), 15[4]/(C) 38(C), 58(P)
		O:	12[7]/(C), 15[4]/(P), 17[4]/(Po), 19[8]/(C), 37(C), 31(C)	O:	15[4]/(P)
		LO:	2[4]/(C), 14(C), 26(C), 31(C)		
MM-4		T:	1(C), 2[4]/(C), 14(C), 22(C), 24(C), 27(C), 30(P), 31(C), 38(C), 58(C), 87(C)	T:	1(C)
		LM:	8(C,Po), 13[4]/(C), 14(C), 26(C), 31(C), 38(C), 41(C), 58(C), 126(C)	LM:	8(C), 31(C), 38(C), 58(P)

Table 3. Cont'd.

Statistical fishing district	Geographic area		Spawning area		Nursery area
MM-4	(Cont'd.)	O:	12[7]/(C), 14(C), 15[4]/(P), 17[4]/(Po), 18[8]/(C), 19[8]/(C), 26(C), 31(C), 37(C), 126(C)	O:	15[4]/(P)
		LO:	14(C), 31(C), 126(C)		
MM-5	A	T:	22(C), 24(C), 27(C), 38(C)		
		LM:	8(C,Po), 14(C), 26(C), 31(C), 58(P), 126(C)	LM:	8(C), 38(C), 58(P)
		O:	15[4]/(P), 17[4]/(Po)	O:	15[4]/(P)
	B	T:	1(C), 21(C), 22(C), 24(C), 27(C), 38(C)	T:	1(C), 24(C)
		LM:	8(C,Po), 14(C), 31(C), 58(P), 126(C)	LM:	8(C), 38(C), 58(P)
		O:	15[4]/(P), 17[4]/(Po), 37(C), 31(C), 105(C)	O:	15[4]/(P)
		LO:	14(C), 26(C), 31(C)		
	C	T:	1(C), 22(C), 27(C), 29(C), 38(C), 75(C), 76(C), 126(C)	T:	1(C), 22(C), 27(C), 29(C), 126(C)
		LM:	8(C,Po), 14(C), 31(C), 58(P)	LM:	8(C), 38(C), 58(P), 126(P)
		O:	15[4]/(P), 17[4]/(C,Po), 37(C)	O:	15[4]/(P)
MM-6	A	T:	1(C), 22(C), 24(C), 27(C), 41(C), 130(C)	T:	1(C), 22(C), 24(C), 27(C)
		LM:	8(C,Po), 14(C), 31(C), 41(C), 58(P), 126(C), 130(C)	LM:	8(C), 38(C), 58(P), 126(P)
		O:	14(C), 15[4]/(P), 17[4]/(Po), 18[8]/(C), 37(C), 31(C), 126(C)	O:	15[4]/(P)
		LO:	14(C), 31(C)		

Table 3. Cont'd.

Statistical fishing district	Geographic area		Spawning area		Nursery area
MM-6	B	T:	1(C), 9(Po), 22(C), 24(C), 27(C), 29)C), 38(C), 46	T:	1(C), 22(C), 24(C), 100(C)
		LM:	2[4]/(C), 8(C,Po), 14(C), 26(C), 31(C), 38(C), 58(P), 126(C), 130(C)	LM:	8(C), 38(C), 58(P), 126(P)
		O:	12[7]/, 14(C), 15[4]/(P), 17[4]/(P,Po), 19[8]/(C), 37(C), 31(C), 126(C)	O:	15[4]/(P)
	C	T:	1(C), 6(P), 9(Po), 22(C,Po), 24(C,P), 27(C), 38(C), 75(P), 76(P)	T:	1(C), 22(C), 24, 27(C)
		LM:	2[4]/(C), 8(C,Po), 14(C), 26(C), 29(C), 31(C), 38(C), 41, 45(C), 46(C), 58(C,P), 67(C), 83, 99(C), 105(C), 125(C), 126(C), 136(C)	LM:	8(C), 9(C), 14(C,P), 26(C), 38(C), 58(C,P), 67(C), 99(C), 100(C), 105(C), 125(C), 126(C,P), 136(C)
		O:	14(C), 15[4]/(P), 17[4]/(Po), 37(C), 31(C), 87(C), 126(C)	O:	15[4]/(P), 38(C), 138(C)
MM-7	A	T:	1(C), 22(C), 24(C), 27(C), 76(C), 88(C)	T:	1(C), 24(C)
		LM:	8(C,Po), 13[4]/(C), 14(C), 27(C), 31(C), 38(C), 58(P), 126(C)	LM:	8(C), 14(P), 38(C), 58(P), 126(P)
		O:	14(C), 15[4]/(P), 17[4]/(Po), 37(C), 31(C), 126(C)	L:	15[4]/(P)
	B	T:	1(C), 8(P), 22(C), 24(C), 27(C), 29(C), 33(C), 38(C), 76(C), 88(C), 100(P), 130(C)	T:	1(C), 24(C)

Table 3. Cont'd.

Statistical fishing district	Geographic area		Spawning area		Nursery area
MM-7	B (Cont'd.)	LM:	8(C,Po), 13[4]/(C), 14(C), 31(C), 38(C), 46(C), 58(P), 126(C)	LM:	8(C), 14(P), 15[4]/, 38(C), 58(P), 126(P), 130
		O:	14(C), 15[4]/(C,P), 17[4]/(C,Po), 20[8]/(C), 37(C), 31(C), 46(C), 126(C)	O:	15[4]/(P)
	C	T:	1(C), 8(C), 9(P,Po), 22(C), 24(C), 27(C), 38(C), 58(Po), 74, 75(P), 76(P), 93(P), 113	T:	1(C), 9(C), 24, 74(C), 93(P)
		LM:	6(P), 8(C,Po), 14(C), 29, 31(C), 38(C), 41, 52(C), 58(C,P), 90, 99(C), 100(C), 105(C), 110, 112(P), 114(C), 125(C), 126(C)	LM:	6(C), 8(C), 9(C), 14(C,P), 22, 29(C), 31(C), 38(C), 46(C), 52(C), 58(C,P), 64(C), 70(C), 76(C), 87(C), 99(C), 105(C), 110(C), 112(C), 113(C), 114(C), 120(C), 125(C), 126(C,P), 136(C)
		O:	14(C), 15[4]/(C,P), 17[4]/(Po), 19[8]/(C), 20[8]/(C), 37(C), 31(C), 84, 126(C), 136(C)	O:	9(C), 15[4]/(P), 31(C), 38(C), 99(C), 126(C), 138(C)
MM-8	A	T:	1(C), 2[4]/(C), 8(C), 9, 27(C), 38(C,P), 45(C)	T:	1(C)
		LM:	2[4]/(C), 8(C,Po), 13[4]/(Po), 14(C,P), 31(C), 38(C), 58(P), 99(P), 126(C), 130(C)	LM:	8(C), 14(P,Po), 31(Po), 38(C), 58(P), 126(C,P)

Table 3. Cont'd.

Statistical fishing district	Geographic area		Spawning area		Nursery area
MM-8	A (Cont'd.)	O:	13[4]/(C), 14(C), 15[4]/(C,P), 17[4]/(Po), 18[8]/(C), 37(C), 31(C), 126(C), 136(C)	O:	8(C), 15[4]/(C,P), 38(C), 136(C)
	B	T:	1(C), 24(C), 27(C), 29(C), 75(C), 76(C)	T:	1(C)
		LM:	2[4]/, 8(C,Po), 13[4]/(Po), 14(C,P), 31(C), 38(C), 58(C,P), 99(P), 100(C), 125(C), 126(C), 130(C), 136(C)	LM:	8(C), 14(P), 15[4]/(C,P), 31(Po), 38(C), 58(C,P), 99(C), 100(C), 125(C), 126(C,P)
		O:	14(C), 15[4]/(C,P), 17[4]/(Po), 37(C), 31(C), 126(C)	O:	38(C)
	C	T:	1(C), 2[4]/(C), 8(C), 22(C), 24(C), 27(C), 93(P)	T:	1(C)
		LM:	8(C,Po), 13[4]/(Po), 14(C,P), 31(C), 58(P), 87(C), 126(C,Po), 130(C)	LM:	8(C), 14(P), 31(Po), 38(C), 58(P), 126(C,P)
		O:	15[4]/(P), 17[4]/(Po), 19[8]/(C), 37(C), 31(C), 126(C)	O:	15[4]/(P), 38(C)
	D	T:	1(C), 2[4]/(C), 27(C), 38(C), 75(P), 76(P), 87(C)	T:	1(C), 76(C)
		LM:	2[4]/(C), 8(C,Po), 13[4]/(Po), 14(C,P), 29(P), 31(C), 38(C), 48(C), 58(C,P), 99(C), 100(C), 105, 125(C), 126(C), 136(C)	LM:	8(C), 13[4]/, 14(P), 15[4]/(P), 22, 29(C), 31(Po), 38(C), 46(C), 58(C,P), 76(C), 93(C), 99(C), 100(C), 105, 125(C,Po), 126(C,P), 136(C)

Table 3. Cont'd.

Statistical fishing district	Geographic area		Spawning area		Nursery area
MM-8	D (Cont'd.)	O:	14(C), 15[4](C,P), 17[4](Po), 37(C), 31(C), 126(C), 138(C)	O:	8(C), 15[4](P), 38(C), 138(P)
		LO:	14(C), 31(C), 126(C)	LO:	14(Po)

1/ Numerical species code according to Table 12.

2/ Spawning or nursery grounds are classified as confirmed (C), probable (P), or potential (Po); see text for definitions. When information was not available to unequivocally support the assignment of one of the classifications, no classification was given.

3/ Waters within the geographic area are classified as tributary (T), littoral mainland (LM), offshore (O), or littoral offshore (LO); see text for definitions.

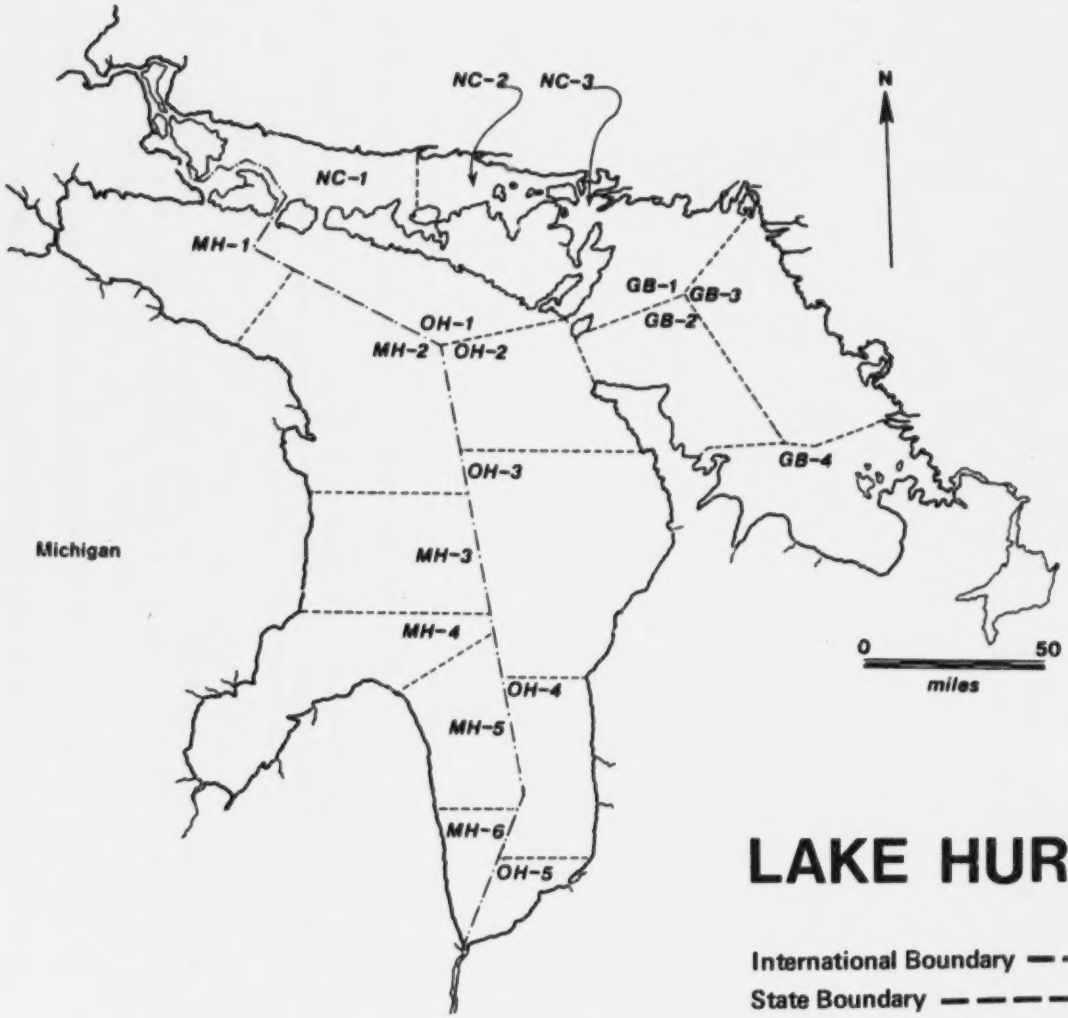
4/ Species listed by State of Michigan as "threatened."

5/ Species listed by U.S. Department of Interior as "endangered."

6/ Species listed by State of Illinois and U.S. Department of Interior as "endangered."

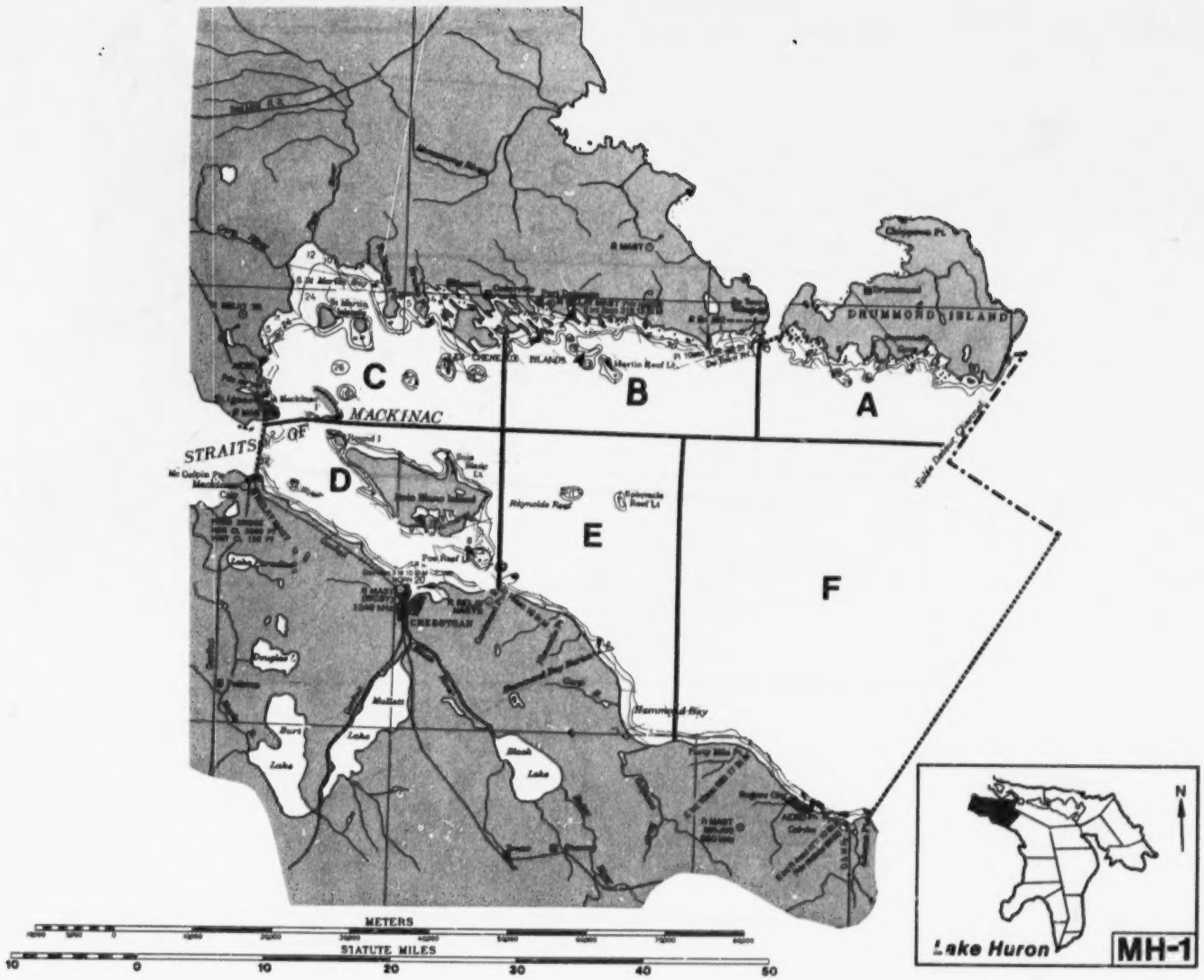
7/ Species listed by State of Michigan and U.S. Department of Interior as "endangered".

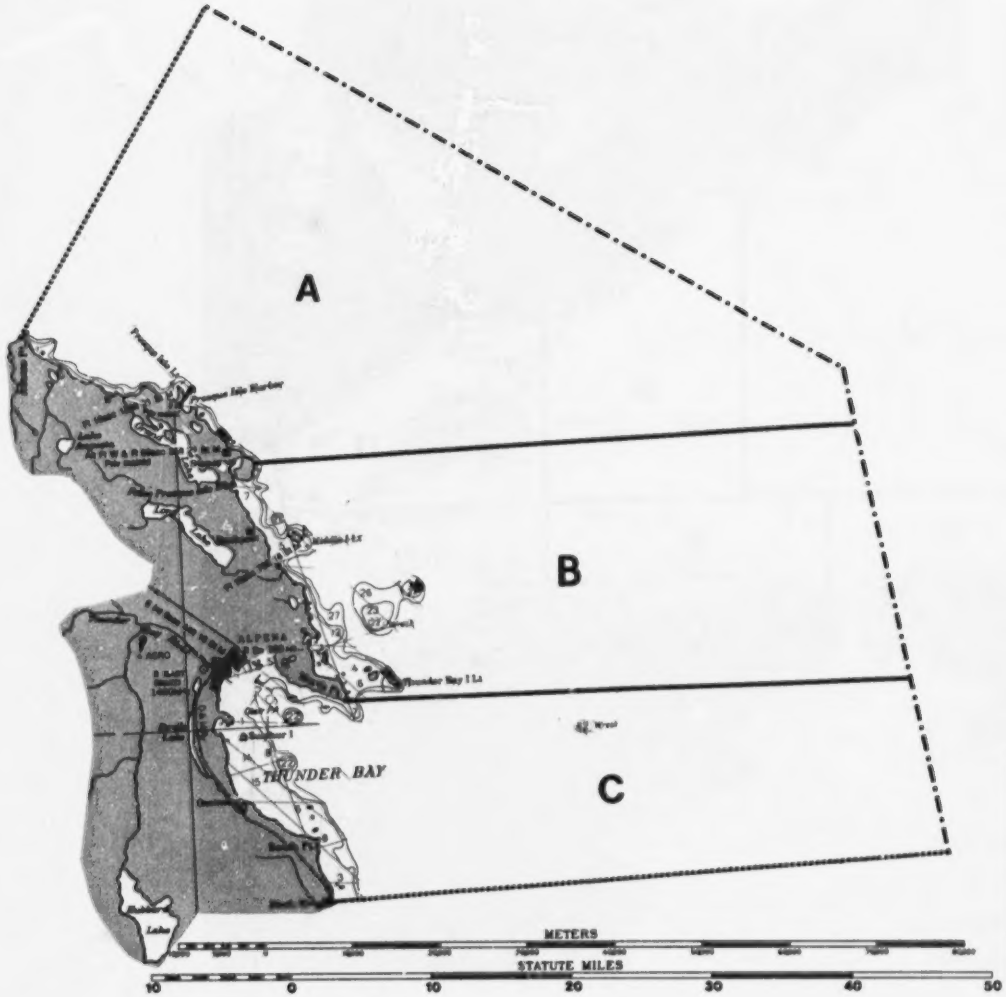
8/ Species listed by State of Michigan as "endangered."



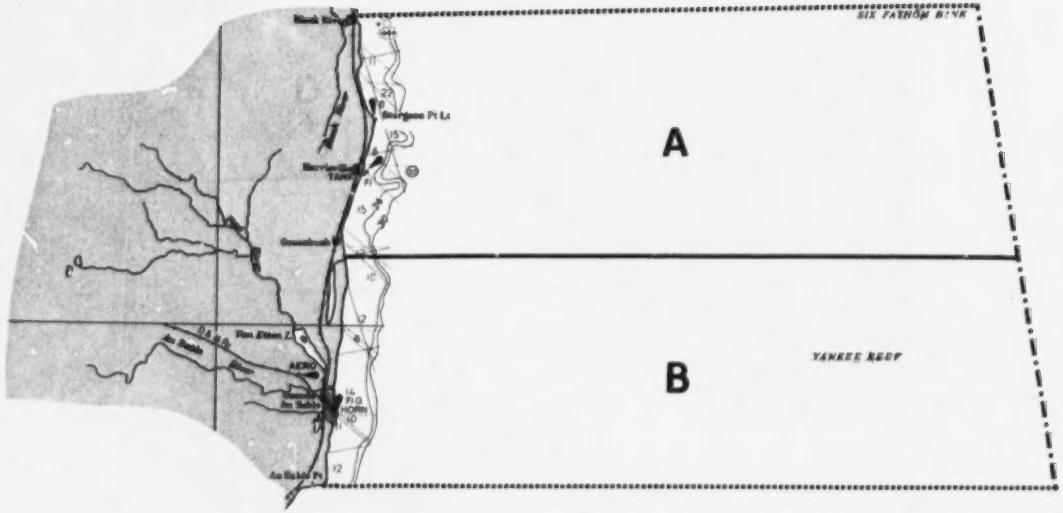
LAKE HURON

International Boundary
State Boundary
Statistical Fishing District
Geographic area


DRUMMOND ISLAND
A
B
C
D
E
F
MACKINAC
STRAITS OF
CHEBOYGAN
METERS
STATUTE MILES
10
0
10
20
30
40
50
N
Lake Huron
MH-1


A
B
C
ALPENA
THUNDER BAY
METERS
STATUTE MILES
10
0
10
20
30
40
50

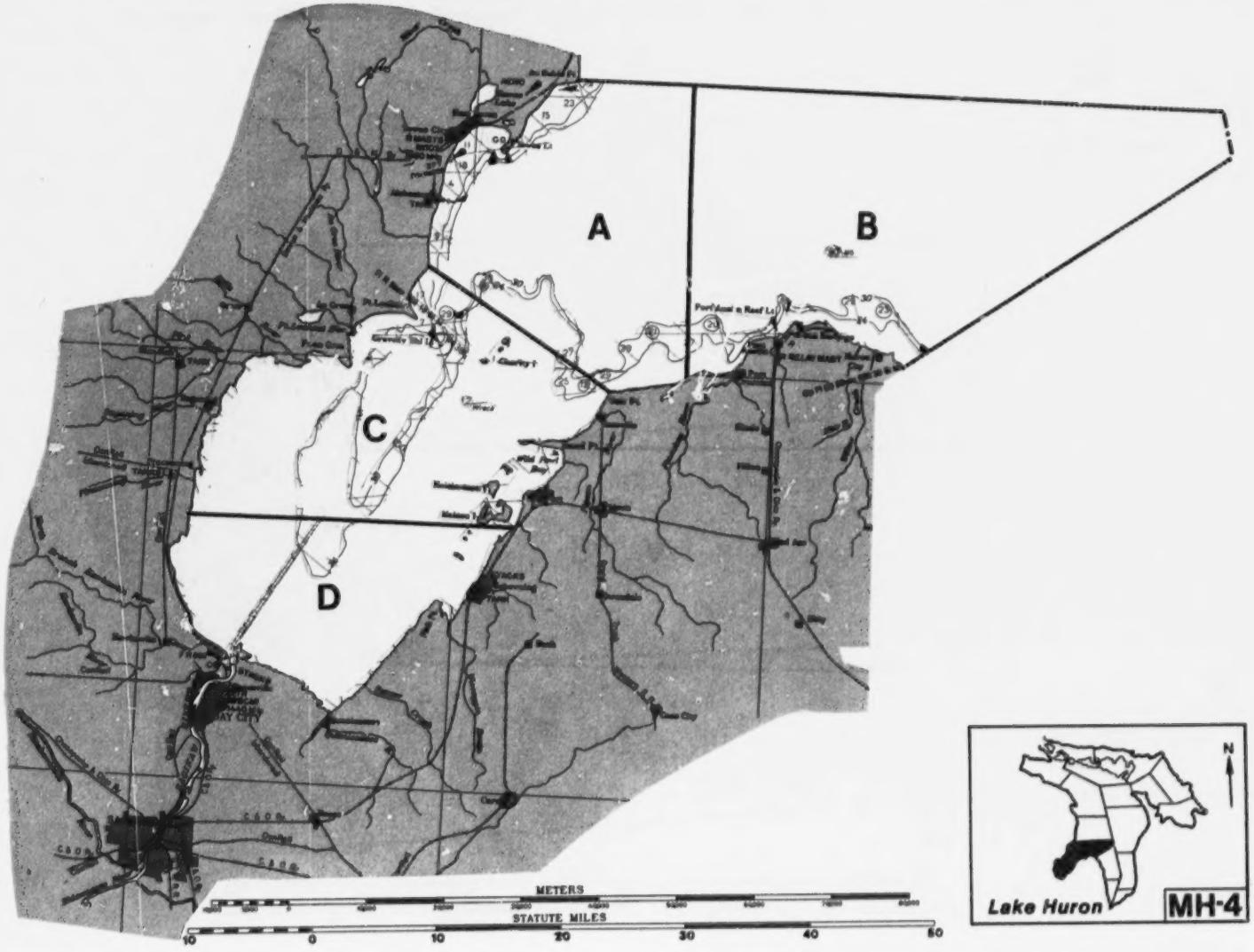
N
Lake Huron
MH-2

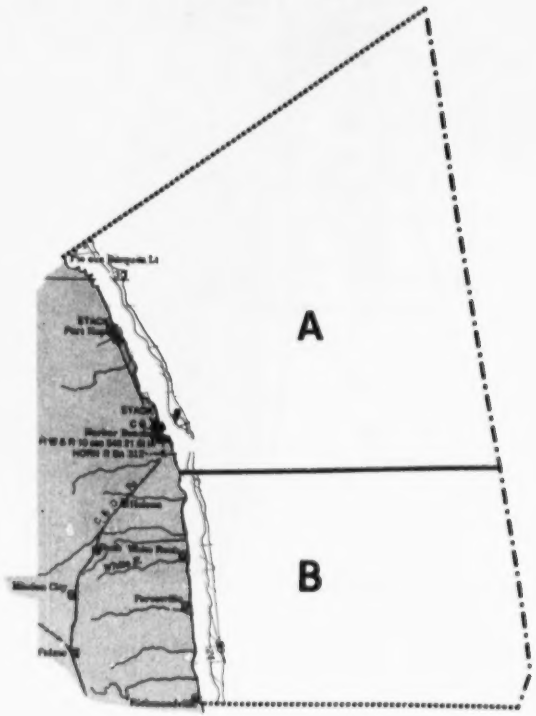


METERS

STATUTE MILES

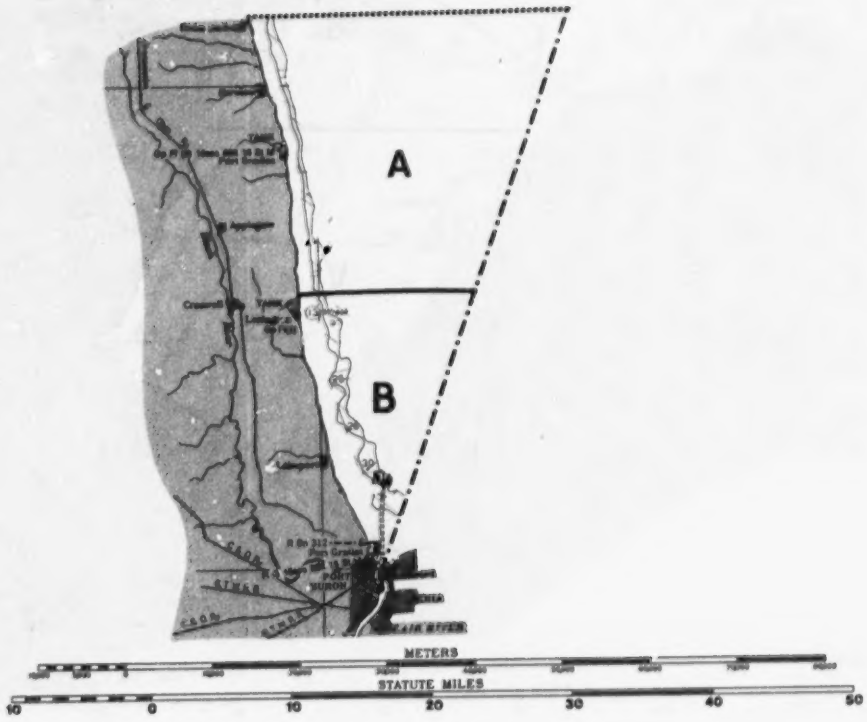
10 0 10 20 30 40 50


A
B
C
D
METERS
STATUTE MILES
10
0
10
20
30
40
50
N
Lake Huron
MH-4

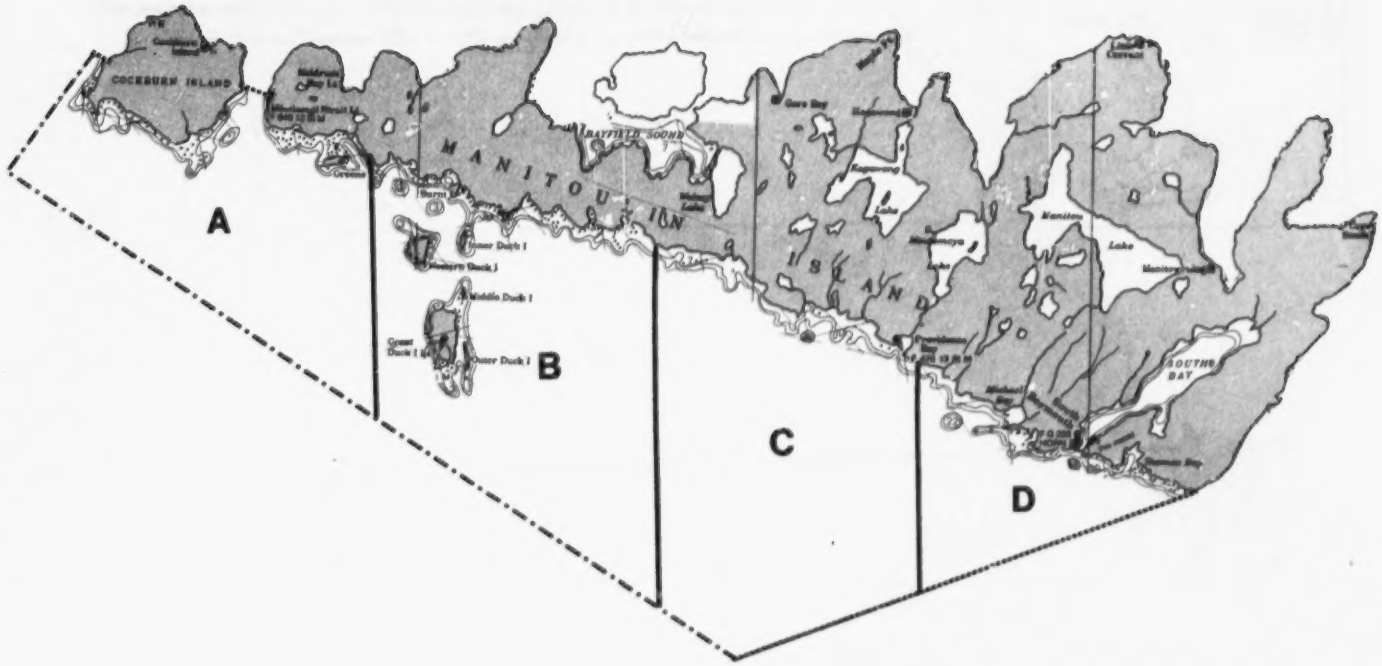

A
B

METERS
STATUTE MILES
10
0
10
20
30
40
50

N
Lake Huron
MH-5

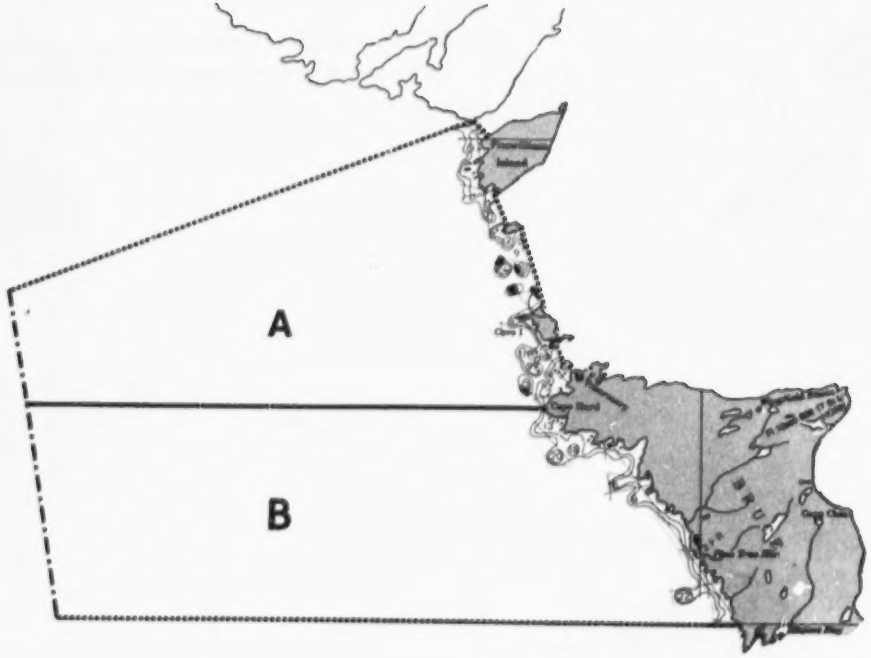

A
B
METERS
STATUTE MILES
10
0
10
20
30
40
50

N
Lake Huron
MH-6


COCKBURN ISLAND
MANITOULIN
ISLAND
BAYFIELD SOUND
SOUTH BAY
A
B
C
D

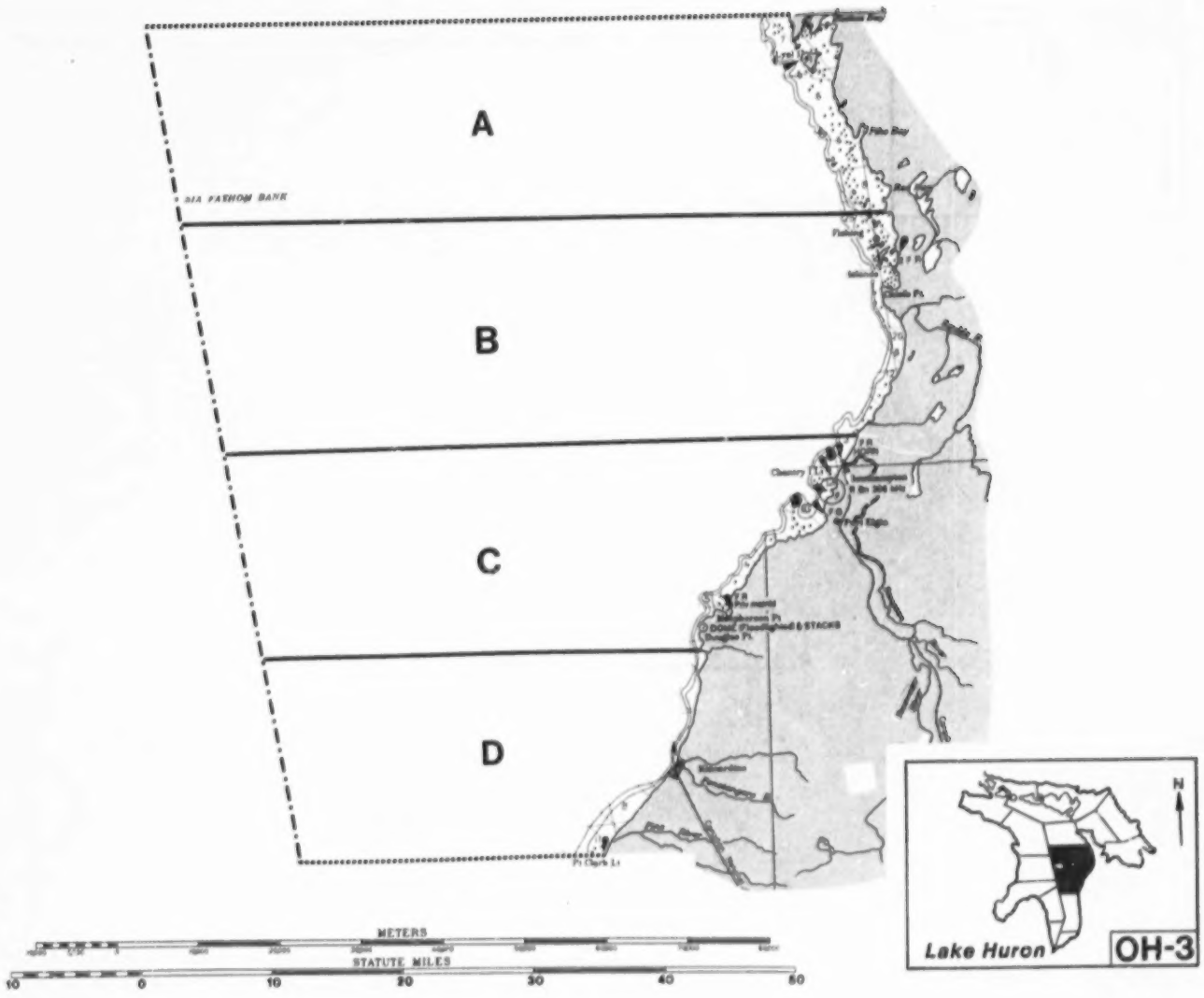
METERS
STATUTE MILES
10
0
10
20
30
40
50

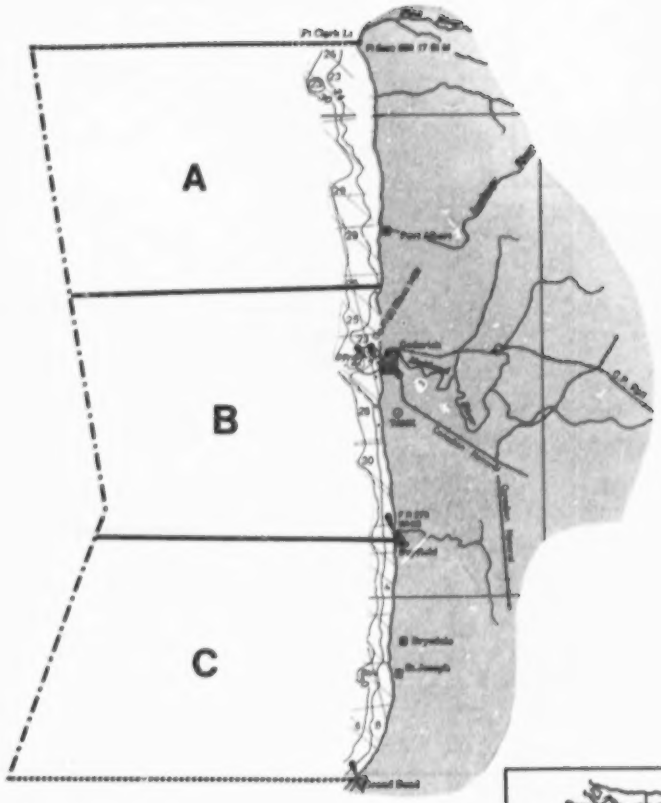
N
Lake Huron
OH-1

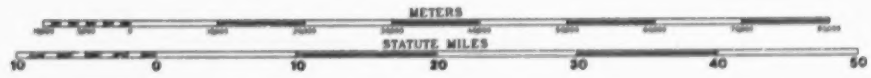

A
B

METERS
STATUTE MILES
10
0
10
20
30
40
50

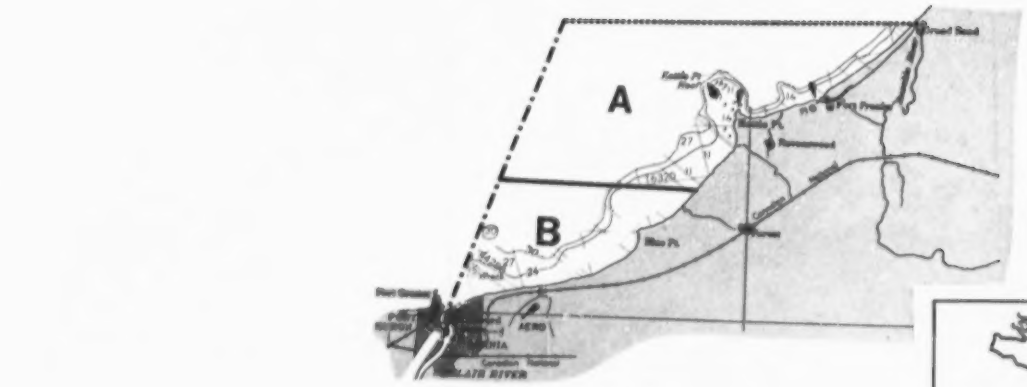
N
Lake Huron
OH-2

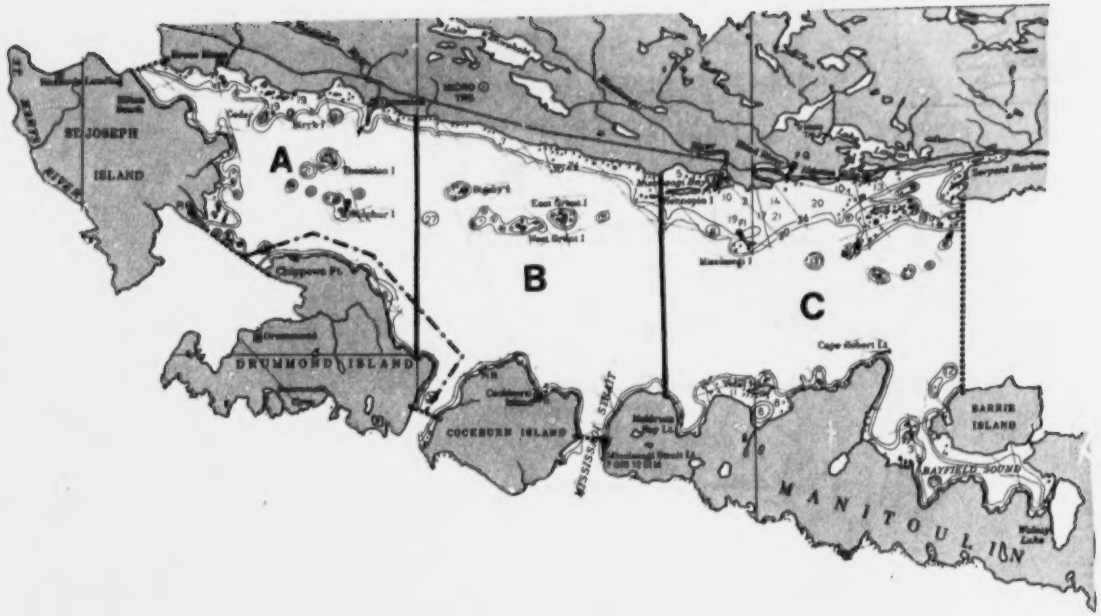

A
B
C
D
SIX FATHOM BANK
METERS
STATUTE MILES
10
0
10
20
30
40
50
N
Lake Huron
OH-3


A
B
C


METERS
STATUTE MILES
10
0
10
20
30
40
50

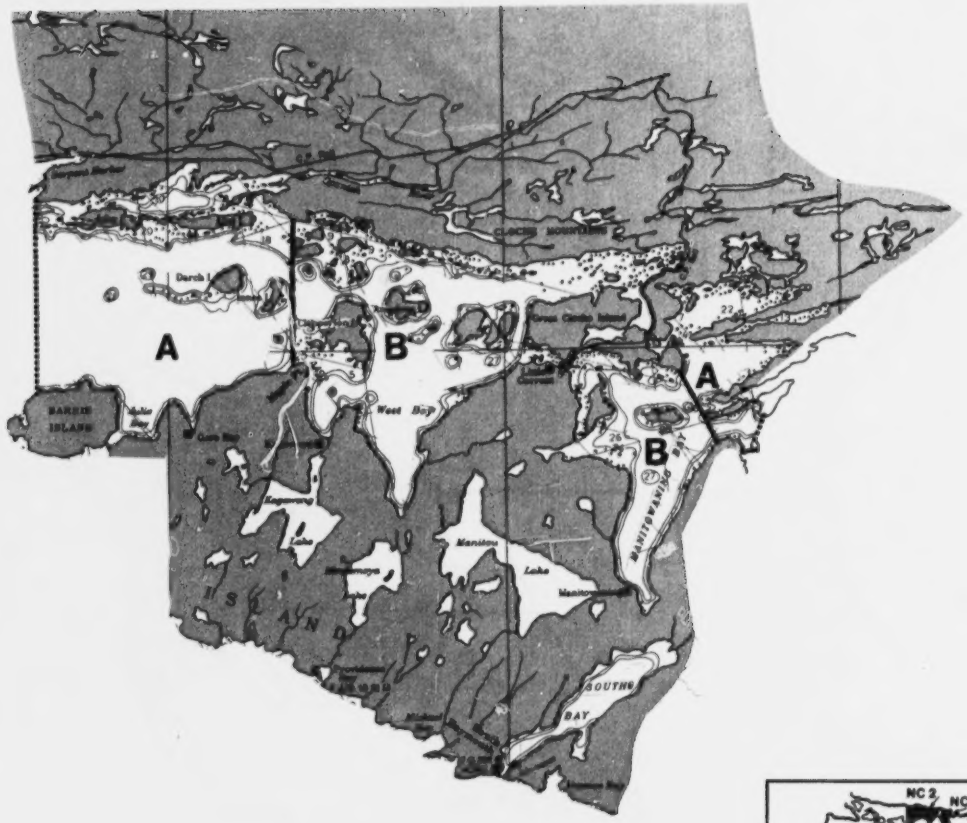
N
Lake Huron
OH-4


A
B
METERS
STATUTE MILES
10
0
10
20
30
40
50
N
Lake Huron
OH-5


A
B
C
ST. JOSEPH
ISLAND
DRUMMOND ISLAND
COCKBURN ISLAND
MISSISSAGI STRAIT
BARRIE
ISLAND
BAYFIELD SOUND
MANITOULIN

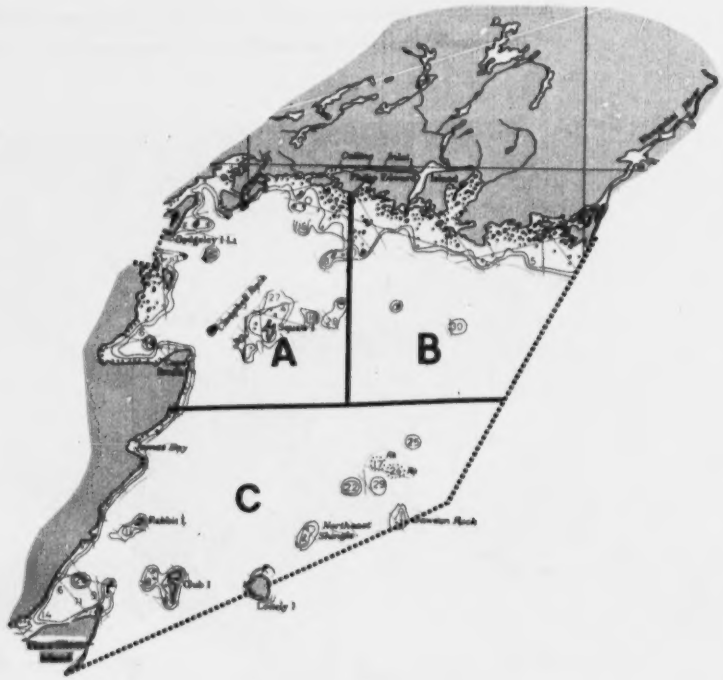
N
Lake Huron
NC-1

METERS
STATUTE MILES
10
0
10
20
30
40
50


A
B
A
B
BARIEE ISLAND
West Bay
Lake
Manitou
Lake
Manitou
ISLAND
SOUTH BAY
MANITOWANING BAY

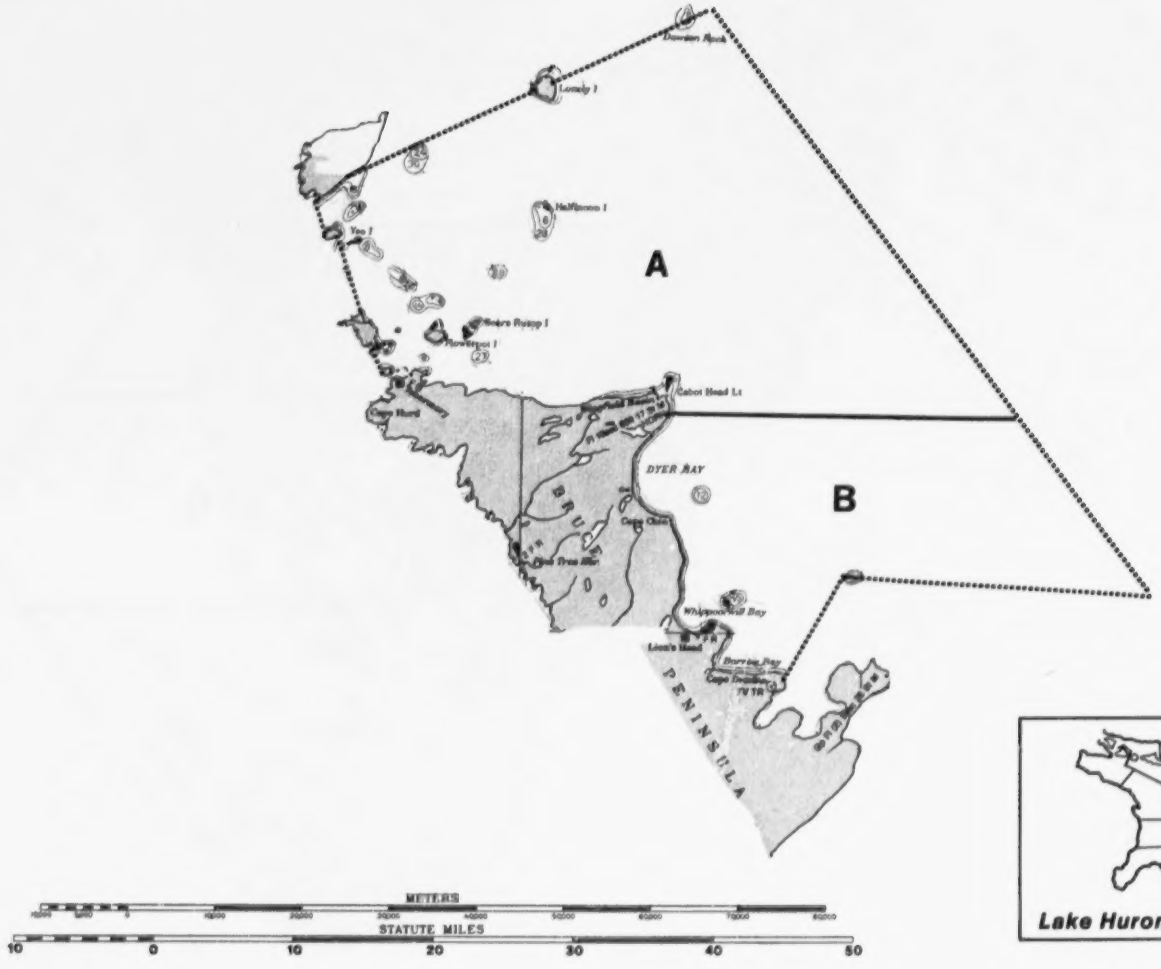
NC 2
NC 3
N
Lake Huron
NC-2,3

METERS
STATUTE MILES
10
0
10
20
30
40
50

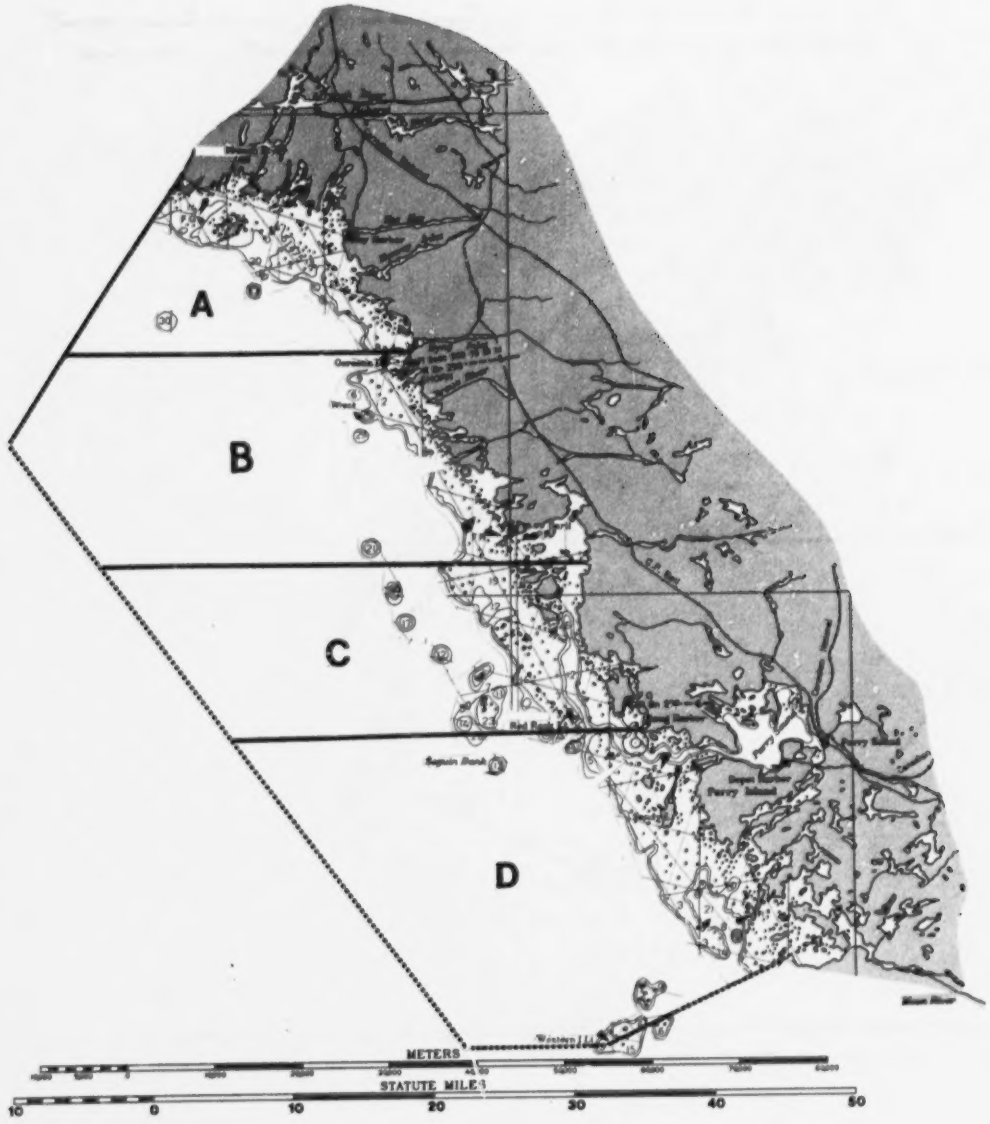

A
B
C

METERS
STATUTE MILES
10
0
10
20
30
40
50

N
Lake Huron
GB-1


A
B
DYER BAY
PENINSULA
Cabot Head Lt
METERS
STATUTE MILES
10
0
10
20
30
40
50

N
Lake Huron
GB-2


A
B
C
D
METERS
STATUTE MILES
10
0
10
20
30
40
50

N
Lake Huron
GB-3

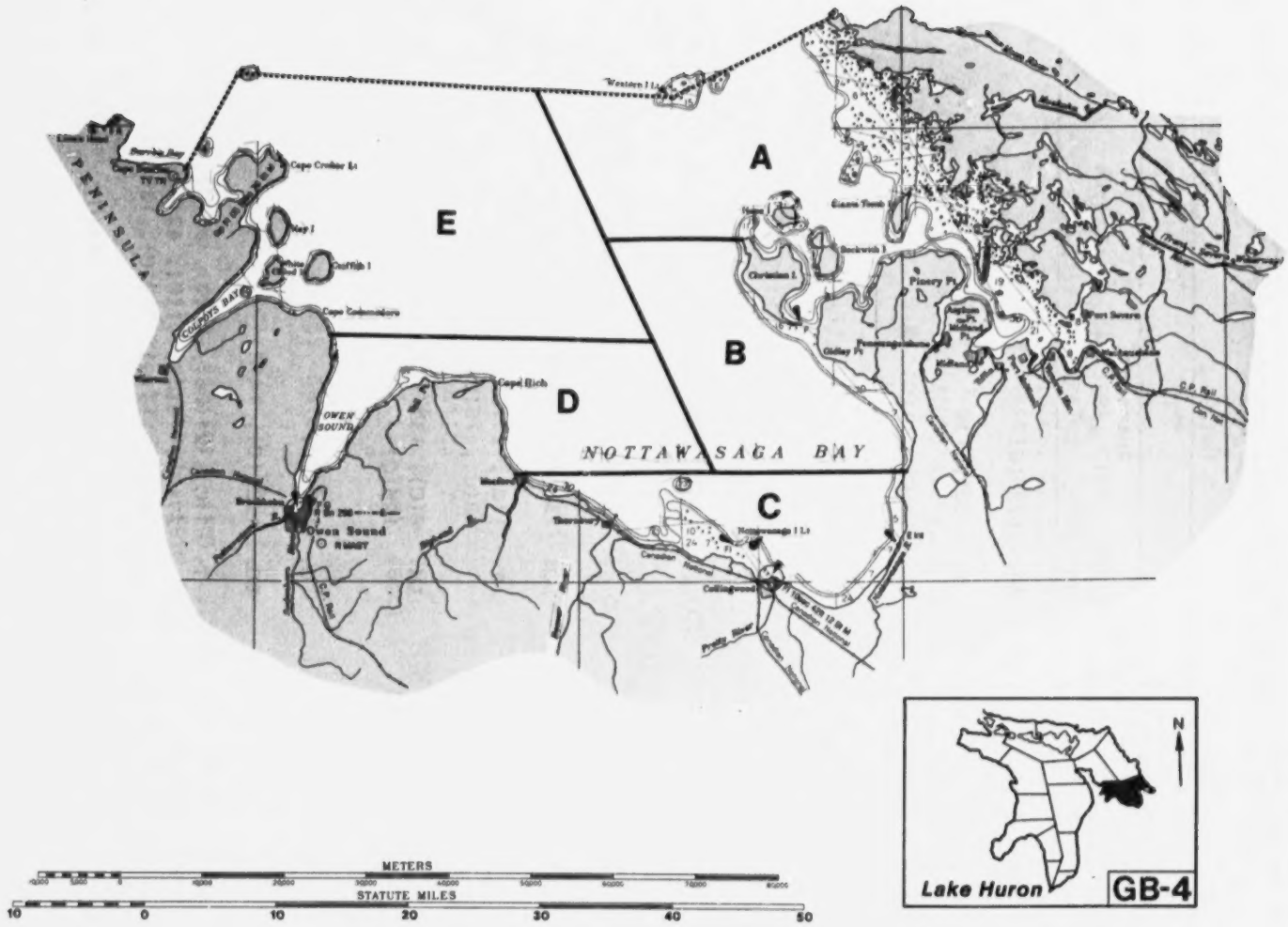

A
B
C
D
E
PENINSULA
COLPOYS BAY
OWEN SOUND
Owen Sound
NOTTAWASAGA BAY
METERS
STATUTE MILES
10 0 10 20 30 40 50
N
Lake Huron
GB-4

Table 4. Fishes[1] with spawning or nursery areas[2] in tributary, littoral mainland, offshore, or littoral offshore waters[3] of Lake Huron.

Statistical fishing district	Geographic area		Spawning area		Nursery area
MH-1		LM:	13[4](C)		
	A	T:	1(C), 130	T:	1(C)
		LM:	14(C), 31(C)		
		O:	14(C)		
		LO:	14(C)		
	B	T:	1(C), 21(C)	T:	1(C)
		LM:	8(C), 13[4](C), 14(C), 41(C), 126(C)	LM:	8(C), 15[4](C), 38(C), 100(C)
		O:	13[4](C), 14(C), 36(C)		
		LO:	13[4](C), 14(C), 31(C)		
	C	T:	1(C), 21(C), 22(C), 29, 38(C), 76(C)	T:	1(C)
		LM:	8(C), 13[4](C), 14(C), 41(C), 126(C)	LM:	8(C), 14(C), 15[4](C), 38(C), 138
		O:	13[4](C)		
		LO:	13[4](C), 14(C)		
	D	T:	1(C), 21(Po), 22(C), 26(C), 27(C), 38(C), 41(C), 42(C), 76(C), 113(C), 128(C), 130(C)	T:	1(C), 76(C)
		LM:	8(C), 14(C), 31(C), 41(C), 42(C)	LM:	8(C), 14(C)
		O:	14(C), 36(C)	O:	14(C)
		LO:	13[4](C), 14(C), 31(C)	LO:	8(C), 38(C)

Table 4. Cont'd

Statistical fishing district	Geographic area		Spawning area		Nursery area
MH-1	E	T:	1(C), 8(C), 9(C), 21(C,Po), 22(C), 24(C), 27(C), 38(C), 45(C), 46(C), 67(C), 75(C), 76(C), 83(C), 113(P), 126(C), 130	T:	1(C), 22(C), 24(P), 113(C)
		LM:	8(C), 27(C), 31(C), 46(C), 75(C)	LM:	8(C), 14(C), 15(C), 38(C), 126(C), 138(C)
		O:	20[5]/(C), 36(C), 31(C)		
		LO:	14(C), 31(C)		
	F	T:	1(C), 21(Po), 24(C), 26, 27(C), 38(C), 41(C), 75(C), 76(C), 105(C)	T:	1(C)
		LM:	8(C), 31(P), 32(P), 41(C)	LM:	8(C)
		O:	20[5]/(C), 36(C), 31(C)		
MH-2		LM:	13[4]/(C)		
	A	T:	21(Po), 41(C)		
		LM:	8(C), 14(C), 31(C), 46(C)	LM:	8(C), 14(C), 38(C), 138
		O:	14(C), 36(C), 31(C)		
	B	T:	1(C)	T:	1(C)
		LM:	8(C), 13[4]/(C), 14(C), 26(C), 31(C,Po), 32(C), 38(C,Po), 105(P), 125(P)	LM:	8(C), 14(C), 26(C), 38(C), 99(C), 100(C), 105(C), 125(C), 126(C), 138(C)
		O:	13[4]/(C), 14(C), 26(C), 31(C)		
		LO:	14(C), 26(C), 31(C)		
	C	T:	1(C), 14(C), 24(C), 27(C), 38(C), 75(C), 87(C), 130(C)	T:	1(C)

Table 4. Cont'd.

Statistical fishing district	Geographic area		Spawning area		Nursery area
MH-2	C (Cont'd.)	LM:	8(C), 13[4]/(C), 14(C), 26(C), 29(C), 31(C), 38(C), 41(C,P,Po), 90(P), 113(Po), 126(C), 129	LM:	8(C), 14(C), 38(C), 100(C), 126(C), 138
		O:	16[5]/(P)		
MH-3		LM:	13[4]/(C)		
	A	T:	1(C), 24(P), 27(C), 38(C)	T:	1(C)
		LM:	8(C), 14(C), 26(C), 31(C), 126(C)	LM:	8(C), 38(C)
		O:	36(C), 31(C)		
	B	T:	1(C), 2[4]/(C), 21(C), 24(P), 27(C), 38(C), 130(C)	T:	1(C)
		LM:	8(C), 13[4]/(C), 14(C), 26(C), 31(C)		
		O:	15[4]/(C), 31(C)		
MH-4		LM:	13[4]/(C)	LM:	8(C), 13[4]/(P)
				O:	8(C)
	A	T:	1(C), 22(C), 27(C), 38(C)	T:	1(C)
		LM:	8(C), 13[4]/(C), 14(C), 26(C), 27(C), 29(C), 31(C,Po), 38(Po), 41(C), 46(C), 87(C), 100(C), 120(C), 125(P), 126(C), 130(C)	LM:	8(C), 38(C), 46(P), 99(C), 100(C), 125(C), 126(C), 138(C)
		O:	13[4]/(C), 14(C),		
	B	LM:	13[4]/(C), 14(C), 26(C), 31(C), 41(C), 46(C), 87(C), 100(C), 120(C), 126(C), 130(C)	LM:	8(C), 38(C), 46(P), 100, 126(C)
		O:	36(C)		

Table 4. Cont'd.

Statistical fishing district	Geographic area		Spawning area		Nursery area
MH-4	C	T:	1(C), 24, 27(C), 38(C), 75(C), 87(C), 126(C), 130(C)	T:	1(C), 130(C)
		LM:	2[4]/(C), 5(C), 6(C), 8(C), 13[4]/(C), 14(C), 26(C), 31(C), 38(C), 41(C), 44(C), 46(C), 87(C), 86(C), 93(C), 98(C), 100(C), 108(C), 110(C), 112(C), 113(C), 114(C), 120(C), 126(C), 129(C), 130(C), 134(C)	LM:	8(C), 38(C), 46(C,P), 58(C), 100, 126(C), 130(C), 138
		O:	14(C)		
	D	T:	1(C), 22(C), 24(C), 27(C), 29, 38(C), 41(P,Po), 46(C), 76(C), 107(P), 110(P), 126(C), 130(C)	T:	1(C), 107(C), 110(C), 130(C)
		LM:	2[4]/(C), 5(P), 6(C), 8(C), 9(P), 13[4]/(C), 14(C), 26(C), 31(C), 38(C), 41(C,P), 46(C), 52(P), 58(P,Po), 74(C), 87(C), 91(P), 92(C), 93(C), 98(C), 99(C), 108(C), 112(C), 113(C), 114(C), 120(C), 126(C), 130(C)	LM:	8(C), 9(C), 38(C), 46(P), 52(C), 58(C), 93(C), 99(C), 107(C), 126(C), 130(C), 134(C)
MH-5		LM:	13[4]/(C)		
	A	T:	1(C)	T:	1(C)
		LM:	8(C), 14(C), 38(C), 41(C), 126(C), 130(C)	LM:	8(C), 38(C), 100(C), 126(C), 138(C)
		O:	8(C), 14[4]/(P), 36(C), 31(C), 38(C)	O:	8(C), 20[5]/
	B	T:	1(C)	T:	1(C)
		LM:	41(C), 130(C)	LM:	8(C), 126(C)
		O:	36(C), 31(C)		

Table 4. Cont'd.

Statistical fishing district	Geographic area		Spawning area		Nursery area
MH-6		LM:	13[4]/(C)		
	A	T:	1(C), 130(C)	T:	1(C)
		LM:	38(C), 41(C), 52, 126(C), 130(C)	LM:	38(C)
		O:	14, 36(C), 31(C)		
	B	T:	1(C), 130(C)	T:	1(C)
		LM:	38(C), 41(C), 126(C), 130(C)		
		O:	36(C), 26(C)		
OH-1		LM:	13(C)		
	A	T:	1(C)	T:	1(C)
		LM:	31(C)		
		O:	31(C)		
		LO:	14(C), 31(C)		
	B	LM:	31(C), 32(C)		
		O:	31(C)		
		LO:	14(C), 31(C)		
	C	T:	1(C), 21(C), 22(C), 23(C), 24(C), 27(C), 38(C)	T:	1(C), 21(C)
		LM:	31(C)		
		O:	31(C)		
	D	T:	1(C), 8(P), 22(C), 23(C), 24(C), 27(C), 38(C), 75(C), 76(C)	T:	1(C), 23(C)
		LM:	13, 14(C), 23(C), 31(C), 58(C), 99(C), 100(C), 105(C), 113, 126(C)	LM:	8(C), 13(C), 14(C), 26(C), 38(C), 58(C), 99(C), 100(C), 105(C), 108(C), 112, 113(C), 138(C)

Table 4. Cont'd.

Statistical fishing district	Geographic area	Spawning area		Nursery area	
OH-1	D (Cont'd.)	O:	31(C)	O:	13(C), 14(C), 38(C), 100(C)
		LO:	31(C)		
OH-2		LM:	13(C)		
	A	LM:	31(C)		
		O:	31(C)		
		LO:	31(C)		
	B	T:	22(C), 23(C), 24(C), 27(C), 29(C)		
		LM:	31(C)		
		O:	31(C)		
OH-3		LM:	13(C)		
	A	LM:	13(C), 14(C), 31(C), 46(C), 126(C)	LM:	13(C), 14(C), 76(C), 126(C)
	B	T:	1(C), 22(C), 24(C), 27(C)	T:	1(C)
		LM:	13(C), 14(C), 31(C), 46(C)	LM:	13(C), 126(C)
		O:	31(C)		
	C	T:	1(C), 22(C), 23(C), 24(C), 27(C), 29(C), 38(C), 87(C), 108(C), 113(C)	T:	1(C)
		LM:	8(C), 14(C), 38(C), 108(C), 110(C), 113(C), 125(C)	LM:	8(C), 9(C), 38(C), 76(C), 103(C), 108(C), 110(C), 113(C), 125(C), 126(C), 136(C), 138(C)
		O:	36(C), 31(C)		

Table 4. Cont'd.

Statistical fishing district	Geographic area	Spawning area		Nursery area	
OH-3	D	T:	1(C), 22(C), 24(C), 27(C), 38(C)	T:	1(C)
		O:	31(C)		
OH-4		LM:	13(C)		
	A	T:	1(C), 22(C), 24(C), 27(C), 38(C)	T:	1(C)
		LM:	31(C)		
		O:	31(C)		
		LO:	31(C)		
	B	T:	1(C), 8(P), 22(C), 24(C), 27(C), 29(C), 38(C), 41(C), 46(C), 75(C), 76(C), 83(C), 88(C), 130(C)	T:	1(C)
	C[6/]				
OH-5		LM:	13(C), 130(C)		
	A	T:	27(C)		
		LM:	14(C), 31(C)		
		O:	31(C)		
		LO:	31(C)		
	B	LM:	110(C), 112(C), 118(C)		
NC-1		LM:	13(C)		
	A	T:	1(C), 8(P), 14, 22(C), 27(C), 38(C), 75(C), 76(C)	T:	1(C)
		LM:	31(C)		
		O:	31(C)		
		LO:	31(C)		

Table 4. Cont'd.

Statistical fishing district	Geographic area	Spawning area	Nursery area
NC-1	B	T: 1(C), 22(C), 38(C)	T: 1(C)
		O: 31(C)	
		LO: 31(C)	
	C	T: 1(C), 22(C), 27(C), 38(C), 130(C)	T: 1(C)
		LM: 14(C), 31(C), 130	
		O: 31(C)	
		LO: 31(C)	
NC-2		LM: 13(C)	
	A	T: 1(C), 38(C), 76(C), 130(C)	T: 1(C)
		LM: 13(C), 14(C), 26, 31(C)	
		O: 31(C), 130(C)	
		LO: 31(C)	
	B	T: 1(C), 38(C), 130(C)	T: 1(C)
		LM: 14, 26, 31(C)	
		O: 31(C)	
		LO: 31(C)	
NC-3		LM: 13(C)	
	A	LM: 31(C)	
		O: 31(C)	
		LO: 31(C)	
	B	LM: 31(C), 113(C)	
		O: 31(C)	
		LO: 31(C)	

Table 4. Cont'd.

Statistical fishing district	Geographic area	Spawning area	Nursery area
GB-1		LM: 13(C), 14(C)	
	A	T: 1(C)	
		LM: 31(C), 113	
		O: 31(C)	
		LO: 14(C), 31(C)	
	B	LM: 113	
		O: 31(C)	
		LO: 31(C)	
	C	LM: 31(C)	
		O: 31(C)	
		LO: 31(C)	
GB-2		LM: 13(C)	
	A	LM: 31(C)	LM: 38(C)
		O: 16(C), 31(C)	
		LO: 31(C)	
	B	T: 23(C)	
		LM: 31(C)	
		O: 16(C), 31(C)	
		LO: 31(C)	
GB-3		LM: 13(C)	
	A	T: 1(C), 14(C), 38(C), 76(C), 83(C), 130(C)	T: 1(C)

Table 4. Cont'd.

Statistical fishing district	Geographic area	Spawning area	Nursery area
GB-3	A (Cont'd.)	LM: 14(C), 31(C)	
		O: 31(C)	
		LO: 14(C)	
	B	T: 1(C), 27(C), 38(C), 76(C), 83(C), 126(C), 130(C)	T: 1(C)
		LM: 108(C), 113(C), 130(C)	LM: 126(C)
	C	LM: 31(C), 130(C)	
		O: 31(C)	
		LO: 31(C)	
	D	T: 1(C), 27(C), 38(C), 130(C)	T: 1(C), 130(C)
		LM: 31(C), 118(C)	
		O: 31(C)	
		LO: 14(C)	
GB-4		LM: 13(C)	
	A	T: 9(C), 23(C)	
		LM: 13(C), 14(C), 26, 31(C)	
		O: 12(C), 13(C), 31(C)	
		LO: 14(C), 31(C)	
	B	T: 1(C), 22(C), 23(C), 24(C), 27(C), 29(C), 38(C)	T: 1(C)
		LM: 31(C)	
		O: 12(C), 31(C)	

Table 4. Cont'd.

Statistical fishing district	Geographic area		Spawning area		Nursery area
GB-4	C	T:	1(C), 2(C), 14(C), 22(C), 23(C), 24(C), 27(C), 29(C), 75(C), 130(C)	T:	1(C), 27(C)
		LM:	14(C), 31(C), 118(C), 138	LM:	138(C)
		O:	12(C), 14(C), 31(C)		
	D	T:	1(C), 22(C), 76(C)	T:	1(C)
		LM:	14(C), 31(C)		
		O:	31(C)		
	E	T:	1(C), 2(C), 23(C), 24(C), 27(C), 29(C), 38(C), 46(C), 76(C), 87(C), 130(C)	T:	1(C)
		LM:	4(C), 41(C), 42(C), 46(C), 113(C), 118(C), 116(C), 130(C)	LM:	8(C), 13(C), 14(C), 46(C), 52(C), 107(C), 110(C), 118(C), 125(C), 126(C)
		O:	31(C)		
		LO:	31(C)		

1/ Numerical species code according to Table 12.

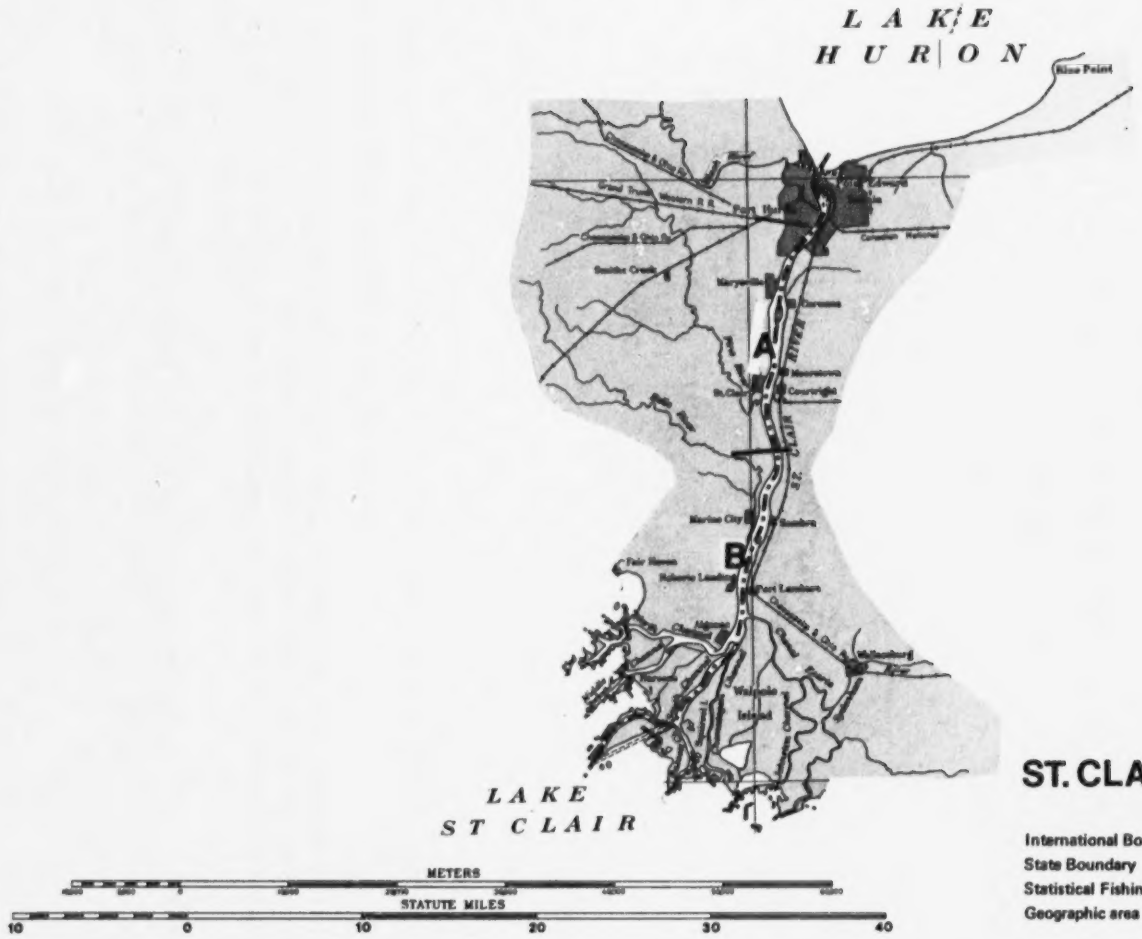
2/ Spawning or nursery grounds are classified as confirmed (C), probable (P), or potential (Po); see text for definitions. When information as not available to unequivocally support the assignment of one of the classifications, no classification was given.

3/ Waters within the geographic area are classified as tributary (T), littoral mainland (LM), offshore (O), or littoral offshore (LO); see text for definitions.

4/ Species listed by State of Michigan as "threatened."

5/ Species listed by State of Michigan as "endangered."

6/ No information.



ST. CLAIR RIVER

International Boundary
State Boundary
Statistical Fishing District
Geographic area

Table 5. Fishes[1] with spawning or nursery areas[2] in tributary, littoral or navigation channel waters[3] of the St. Clair River.

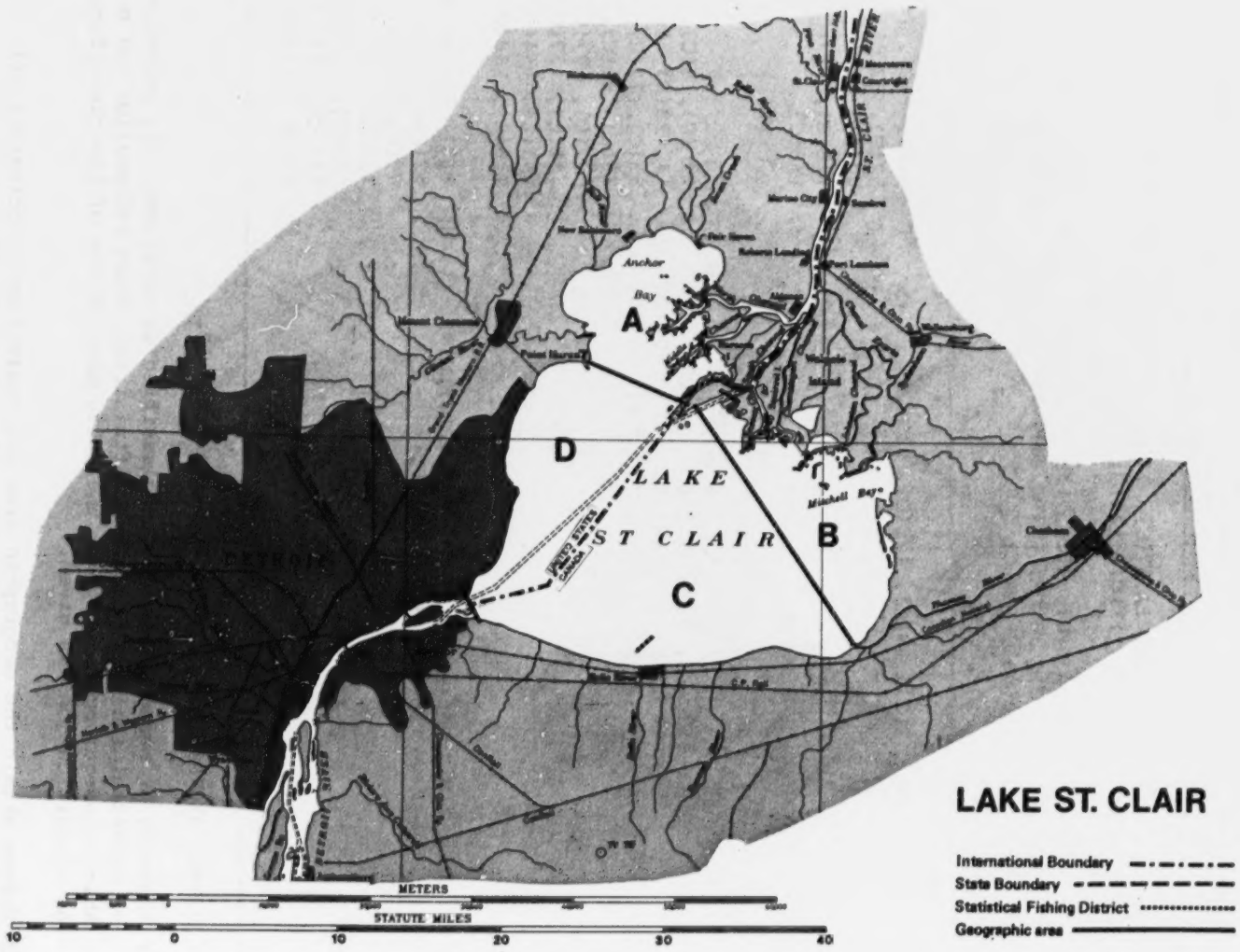
Geographic area		Spawning area		Nursery area
A	T:	1(C), 8(C), 27(C), 34(C), 87(C), 88(C), 113(C), 126(C), 130(C)	T:	1(C)
	L:	1(C), 8(C), 9(C), 13[4](C), 14(C), 27(C), 38(C), 113(C,Po), 126(C), 130(Po), 139(C)	L:	1(C), 2[4], 8(C), 14(C), 38(C), 46(C), 48(C), 72(C), 76(C), 99(C), 100(C), 126(C), 127(C), 130(C), 133(C), 138(C)
	N:	8(C), 38(C), 126(C), 139(C)	N:	8(C), 9(C), 14, 38(C), 52(C), 72(C), 76(C), 99(C), 100(C), 107, 126(C), 127(C), 133(C), 138(C)
B	T:	87(C), 88(C), 113(C)		
	L:	2[4](C), 8(C), 13[4](C), 14(C), 33(C), 38(C), 46(C), 76(C), 108(C), 113, 118, 126(C), 130(C,P), 139(C)	L:	2[4](C), 8(C), 9(C), 14, 38(C), 46(C), 52(C), 72(C), 76(C), 79(C), 92(C), 99(C), 100(C), 107(C), 113(C), 126(C), 127(C), 130(C), 133(C), 134(C), 135(C), 136(C), 138(C)
	N:	2[4](C), 8(C), 38(C), 42(C), 126(C), 130(C), 139(C)	N:	8(C), 38(C), 46(C), 52(C), 72(C), 76(C), 79(C), 92(C), 99(C), 100(C), 107(C), 113(C), 126(C), 127(C), 130(C), 133(C), 134, 135(C), 136(C), 138(C)

1/ Numerical species code according to Table 12.

2/ Spawning or nursery grounds are classified as confirmed (C), probable (P), or potential (Po); see text for definitions. When information was not available to unequivocally support the assignment of one of the classifications, no classification was given.

3/ Waters within the geographic area are classified as tributary (T), littoral (L) or navigation channel (N); see text for definitions.

4/ Species listed by State of Michigan as "threatened."



LAKE ST. CLAIR

International Boundary
State Boundary
Statistical Fishing District
Geographic area

Table 6. Fishes[1] with spawning or nursery areas[2] in tributary, littoral or navigation channel waters[3] of Lake St. Clair.

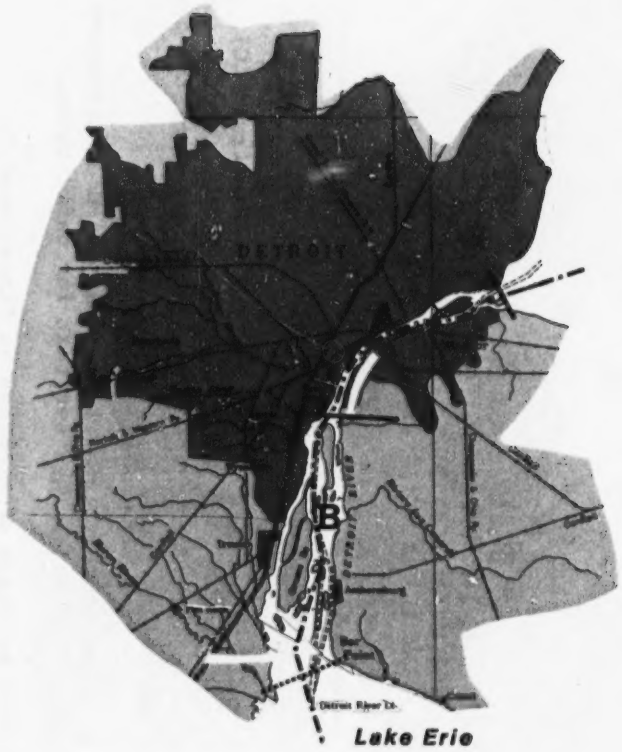
Geographic area		Spawning area		Nursery area
A	T:	1(C), 2[4](C), 41(C), 42(P), 87(C), 88(C), 130(C)		
	L:	4, 6(C), 8(C), 9(C), 14, 41(C), 42(C), 44(C), 46(C), 50(C), 52(C), 54(C), 58(C), 60(C), 64(C), 65(C), 92(C), 93(C), 98(C), 108(C), 110(C), 112(C), 113(C), 114(C), 115(C), 116(C), 119(C), 120(C), 121(P), 126(C), 130(C)	L:	2[4](C), 6(C), 8(C), 9(C), 38(C), 41(C), 42(C), 46(C), 50(C), 58(C), 93(C), 98(C), 108(C), 110(C), 112(C), 113(C), 114(C), 115(C), 116(C), 119(C), 120(C), 126(C), 130(C)
B	L:	4(C), 41(C), 42(C), 44(C), 46(C), 50(C), 52(C), 54(C), 58(C), 60(C), 93(C), 108(C), 110(C), 112(C), 113(C), 114(C), 115(C), 116(C), 118(C), 119(C), 126(C), 130(C)	L:	6(C), 46(C), 113(C), 114(C), 119(C)
C	T:	1(C), 93(C), 107(C), 130(C)	T:	1(C)
	L:	130(C)	L:	58(C)
D	T:	130(C)		
	L:	14(P), 42(C), 44(C), 46(C), 52(C), 54(C), 93(C), 107(C), 108(C), 112(C), 113(C), 126(C)	L:	4(C)

1/ Numerical species code according to Table 12.

2/ Spawning or nursery grounds are classified as confirmed (C), probable (P), or potential (Po); see text for definitions. When information was not available to unequivocally support the assignment of one of the classifications, no classification was given.

3/ Waters within the geographic area are classified as tributary (T), littoral (L) or navigation channel (N); see text for definitions.

4/ Species listed by State of Michigan as "threatened."



METERS

STATUTE MILES

10 0 10 20 30 40

DETROIT RIVER

International Boundary

State Boundary

Statistical Fishing District

Geographic area

Table 7. Fishes[1] with spawning or nursery areas[2] in tributary, littoral or navigation channel waters[3] of the Detroit River.

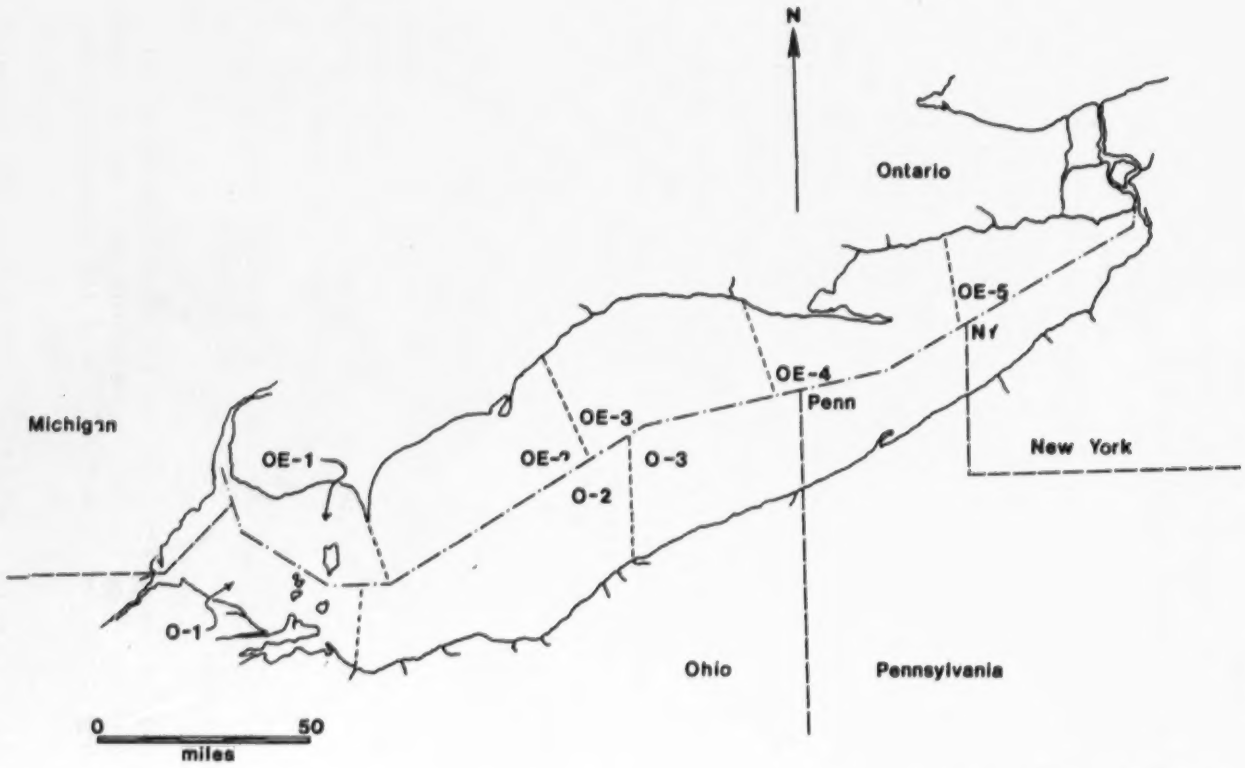
Geographic area		Spawning area		Nursery area
A	L:	2[4](P), 14(C,P), 38(C), 42(C)	L:	8(C), 9(C), 14(C), 38(C), 46(C), 52(C), 58(C), 72(C), 76(C), 100(C), 102(C), 99(C), 107(C), 117(C), 125(C), 126(C), 127(C), 130(C), 134(C), 138(C)
			N:	8(C), 9(C), 14(C), 38(C), 46(C), 52(C), 58(C), 72(C), 76(C), 100(C), 102(C), 99(C), 107(C), 125(C), 117(C), 126(C), 127(C), 130(C), 134(C), 138(C)
B	L:	2[4](C), 3(C), 5(C), 9(C), 13[4], 14(C,P), 31(C), 38(C), 41(C), 42(C), 44(C), 46(C), 52(C), 72(C), 93(C), 98(C), 107(C), 108(C), 112(C), 113(C), 114(C), 115(C), 120(C), 126(C), 129(C), 130(C), 134(C)	L:	3(C), 14(C), 38(C), 41(C), 44(C), 46(C), 52(C), 107(C), 126(C), 130(C)
	N:	2[4](C), 113(C)	N:	8(C), 9(C), 14(C), 38(C), 46(C), 52(C), 58(C), 72(C), 76(C), 99(C), 100(C), 107(C), 113(C), 117(C), 125(C), 126(C), 127(C), 130(C), 134(C), 138(C)

[1] Numerical species code according to Table 12.

[2] Spawning or nursery grounds are classified as confirmed (C), probable (P), or potential (Po); see text for definitions. When information was not available to unequivocally support the assignment of one of the classifications, no classification was given.

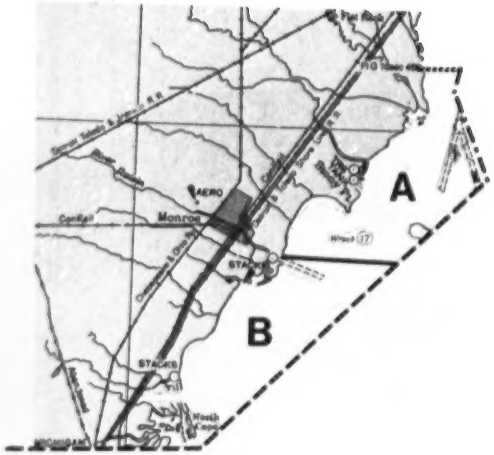
[3] Waters within the geographic area are classified as tributary (T), littoral (L) or navigation channel (N); see text for definitions.

[4] Species listed by State of Michigan as "threatened."

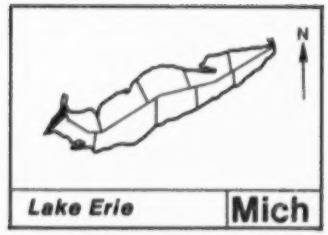


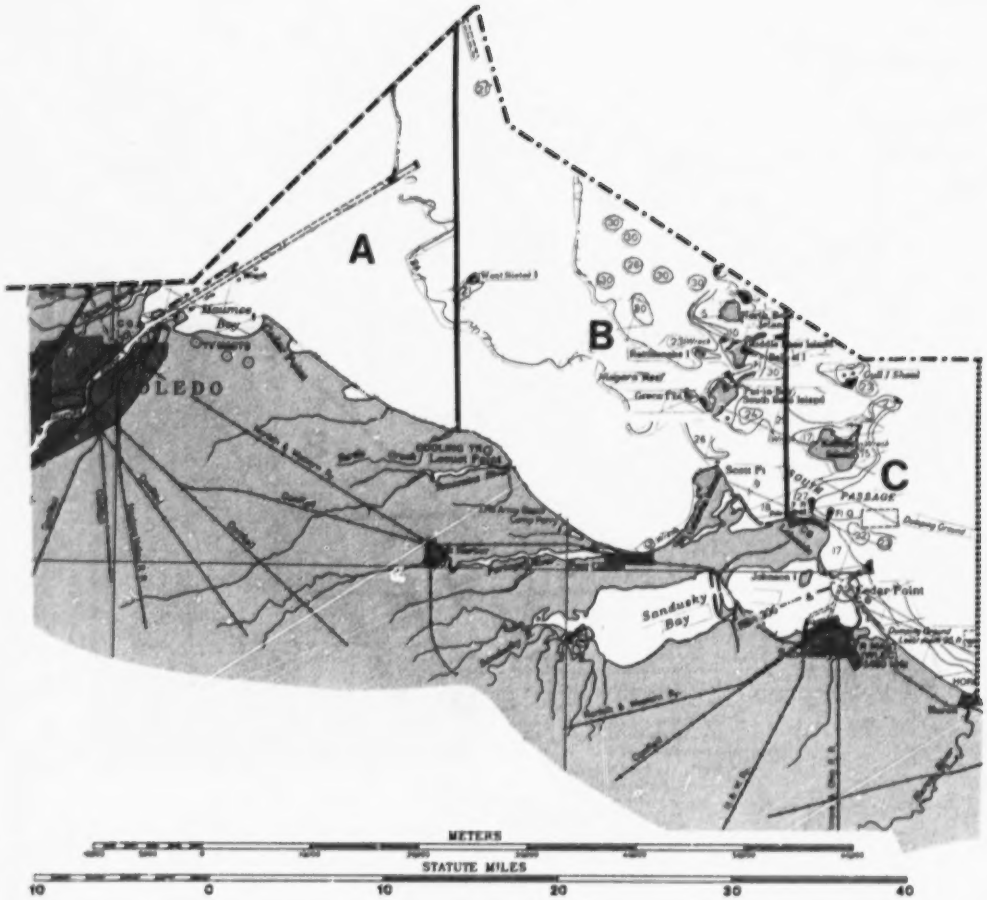
LAKE ERIE

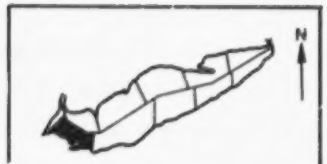
International Boundary
State Boundary
Statistical Fishing District
Geographic area


A
B
AERO
Monroe
STACKS
STACKS

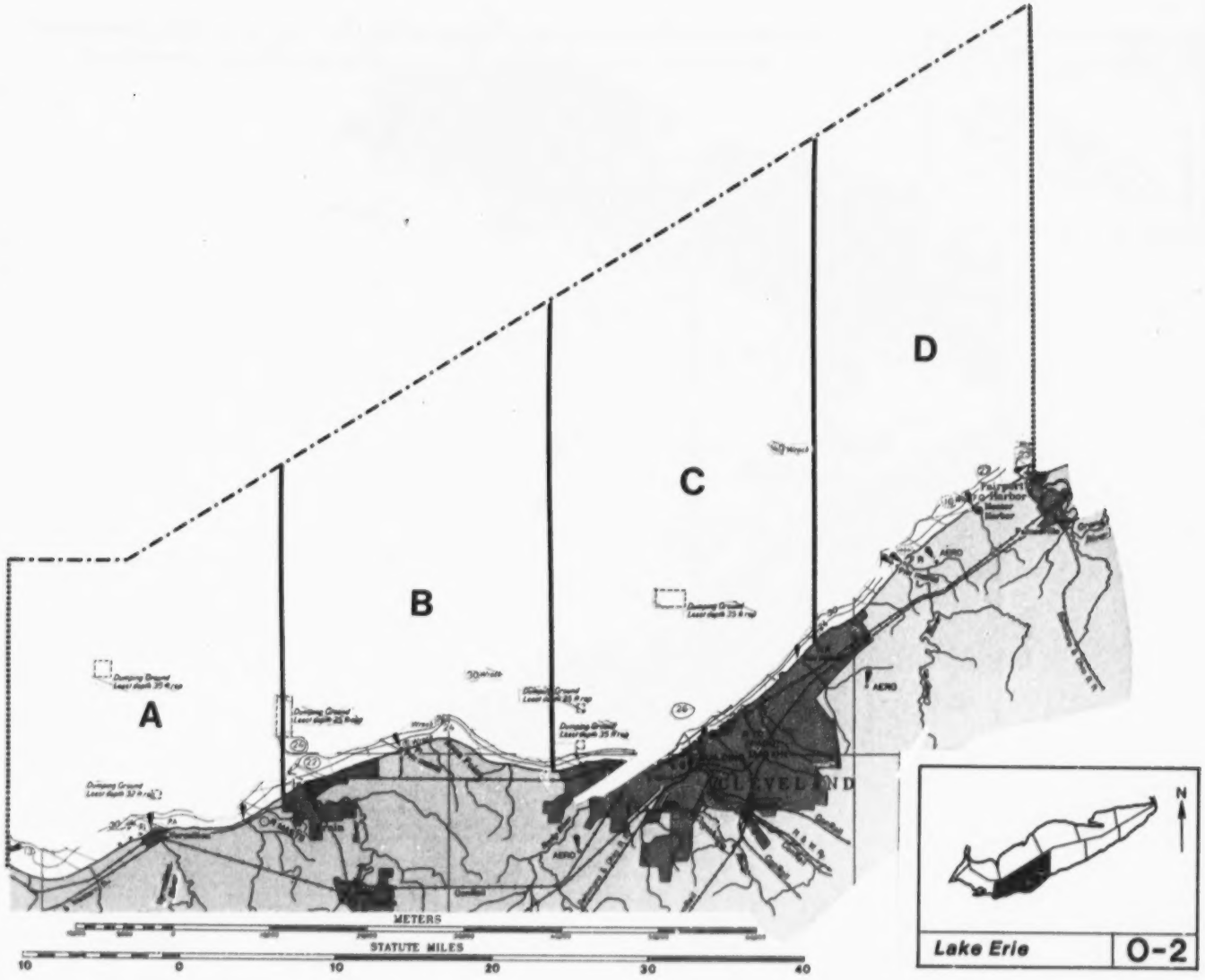
METERS
STATUTE MILES
10
0
10
20
30
40

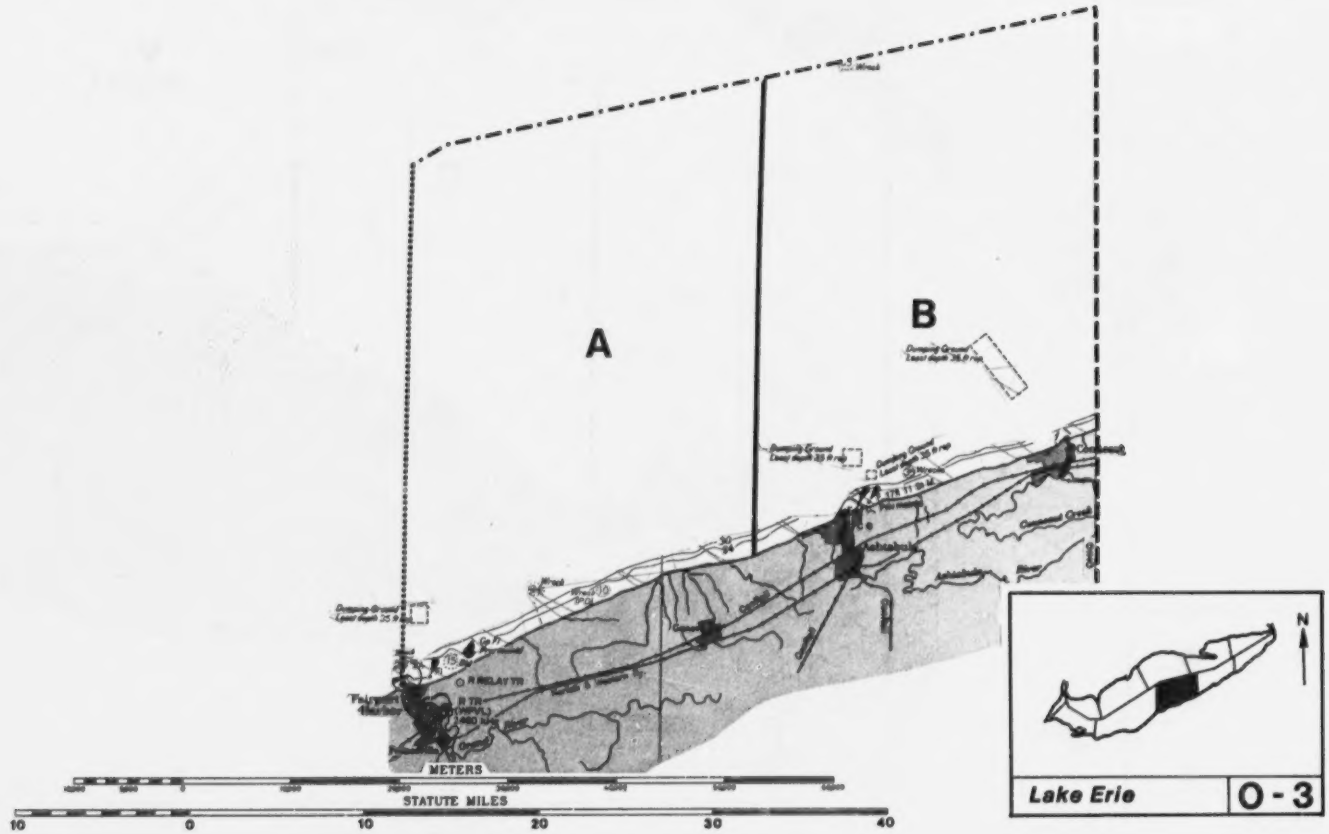

N
Lake Erie
Mich

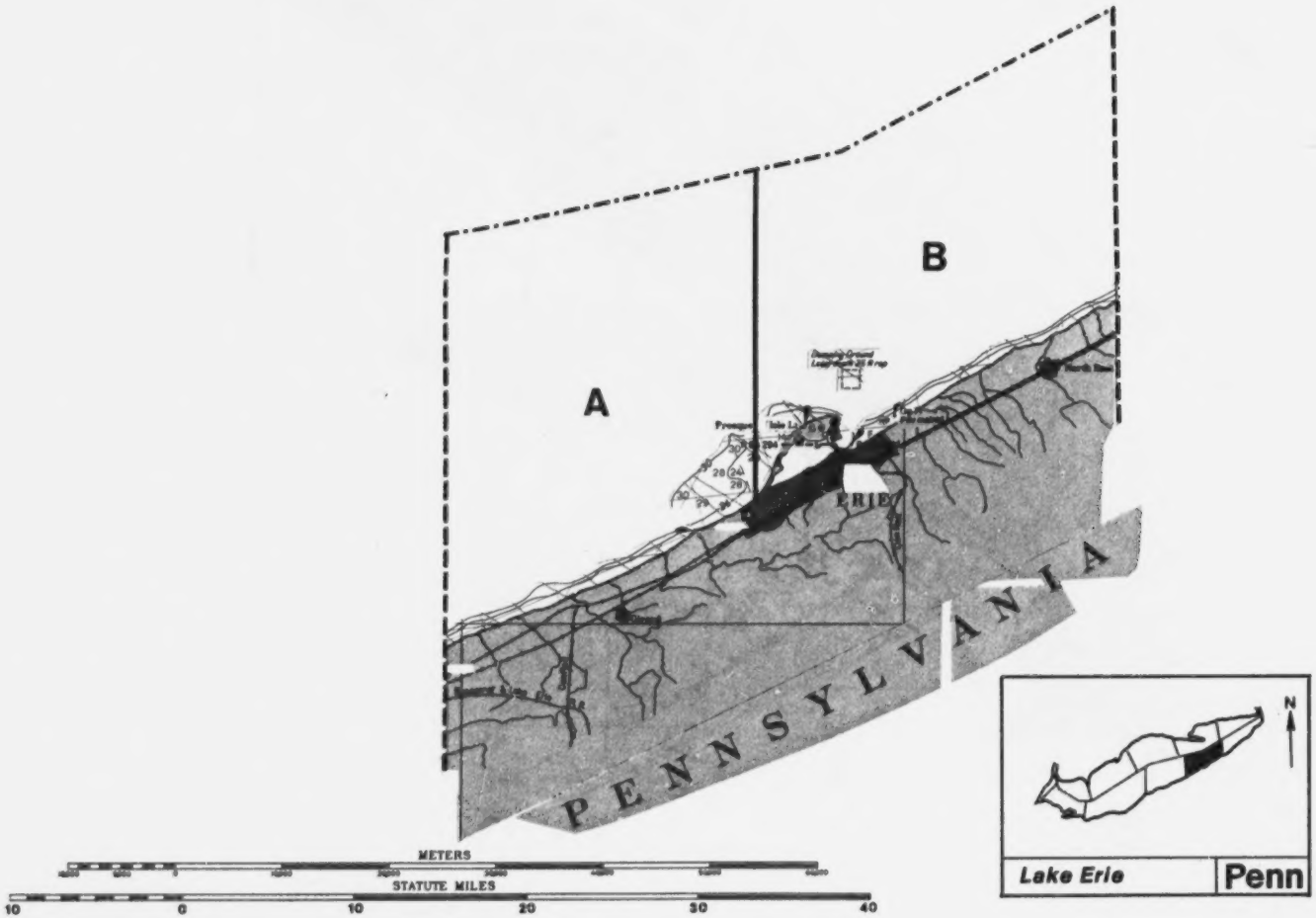

A
B
C
TOLEDO
Sandusky Bay
Cedar Point
METERS
STATUTE MILES
10
0
10
20
30
40

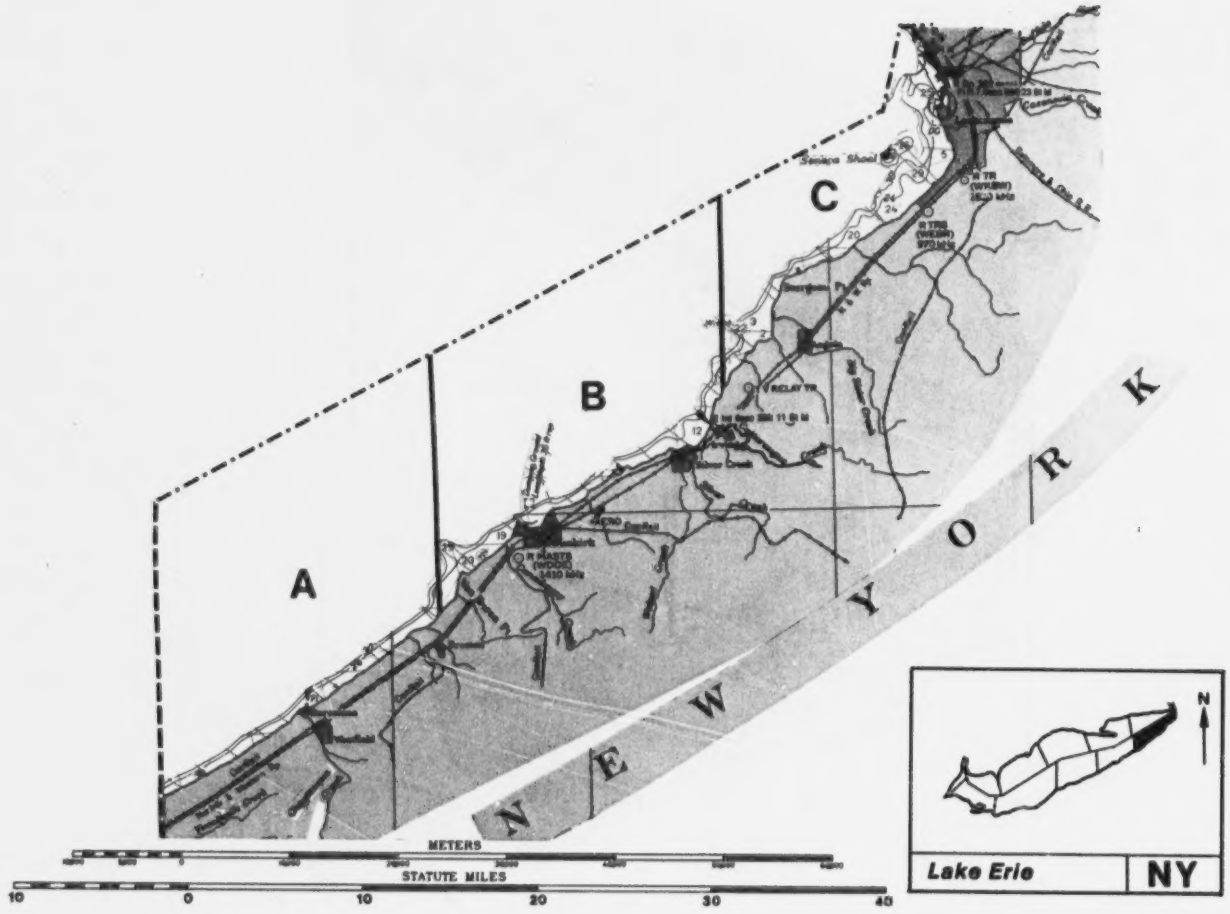

N

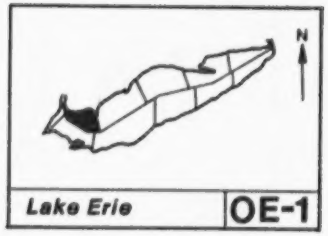
Lake Erie | O-1


A
B
C
D
METERS
STATUTE MILES
10
0
10
20
30
40
N
Lake Erie
O-2


A
B
METERS
STATUTE MILES
10
0
10
20
30
40
N
Lake Erie
O - 3


A
B
ERIE
PENNSYLVANIA
METERS
STATUTE MILES
10
0
10
20
30
40
N
Lake Erie
Penn


A
B
C
NEW YORK
METERS
STATUTE MILES
10
0
10
20
30
40
N
Lake Erie
NY

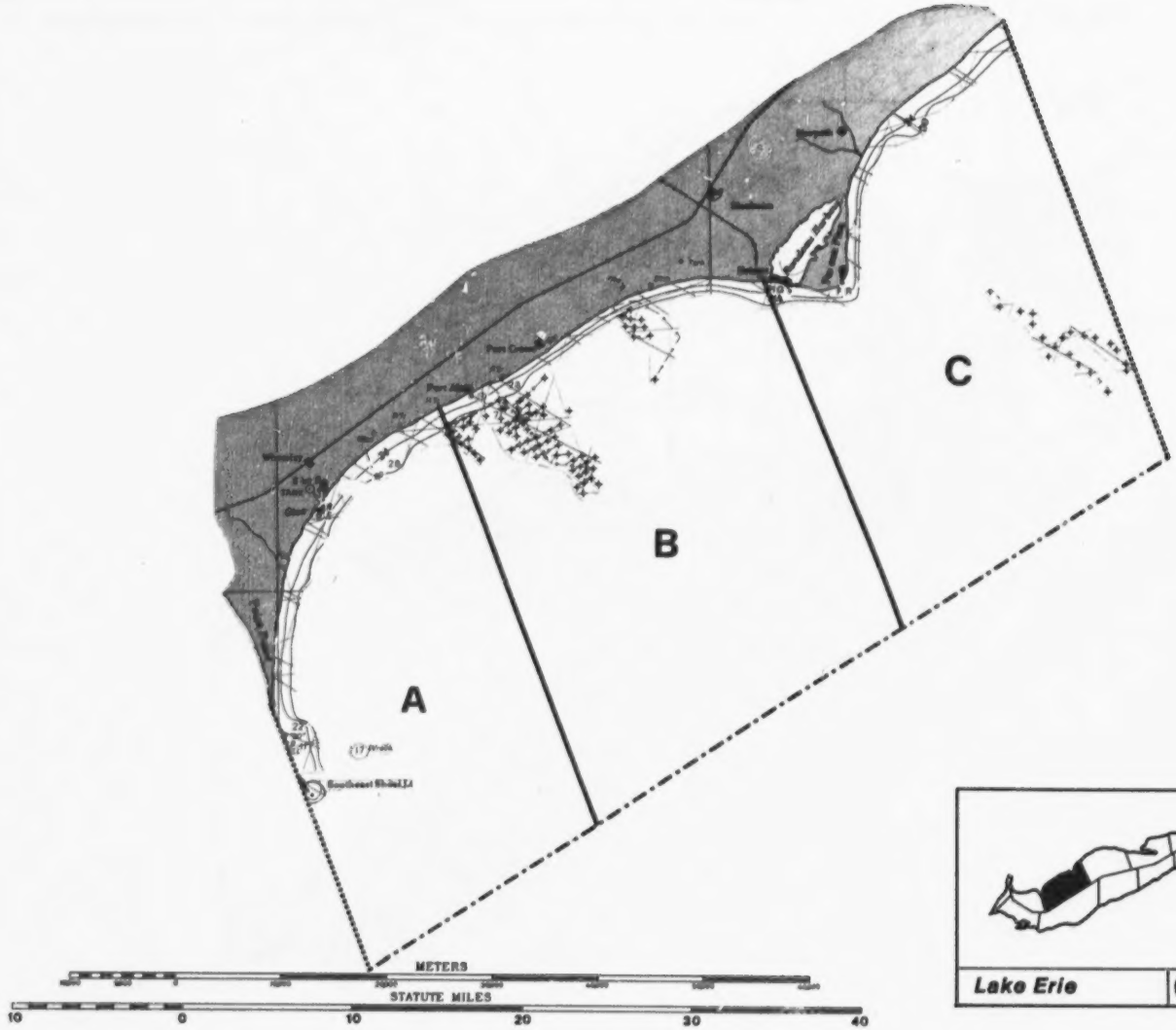


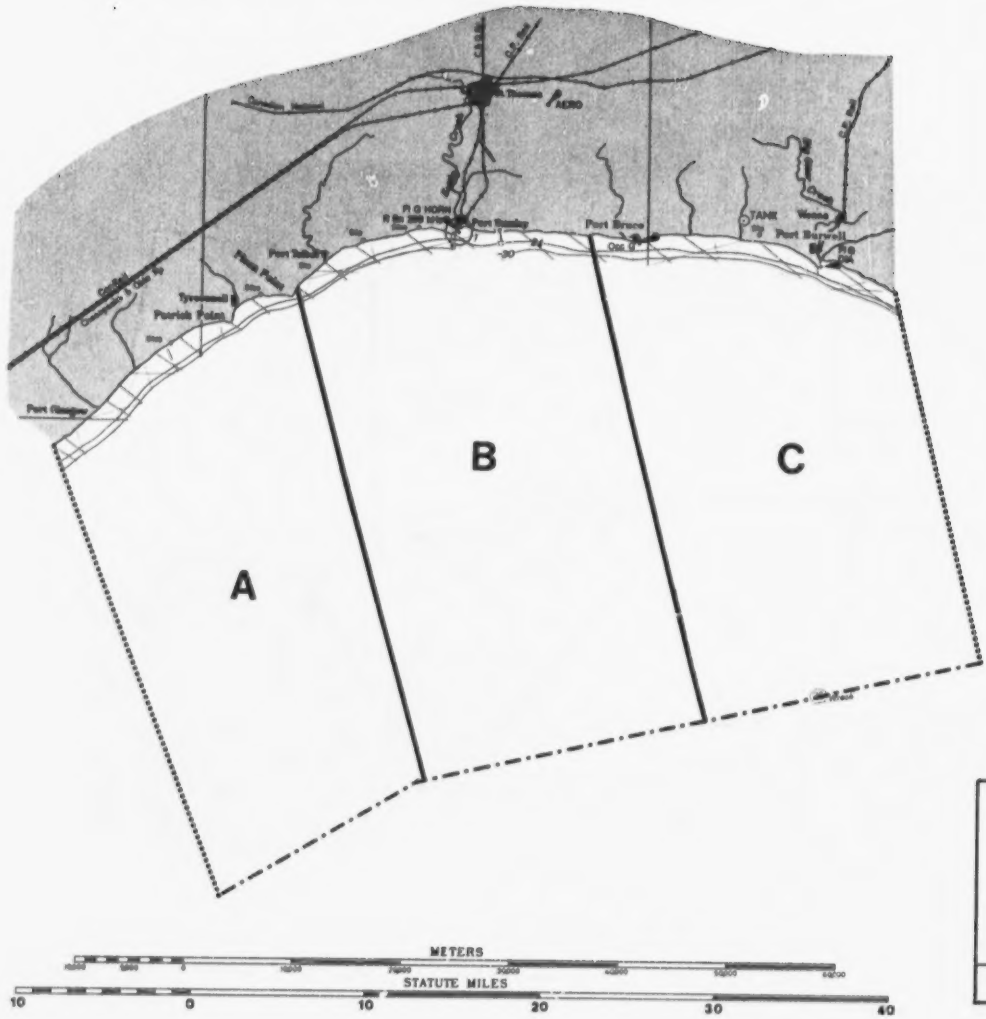
Lake Erie | OE-1

METERS

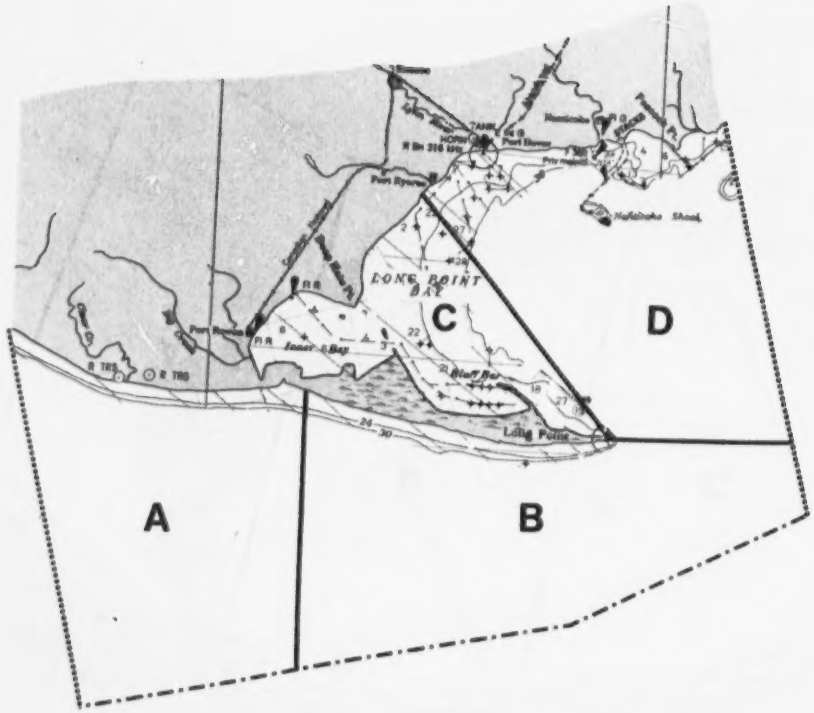
STATUTE MILES

10 0 10 20 30 40


A
B
C
METERS
STATUTE MILES
10
0
10
20
30
40
N
Lake Erie
OE-2

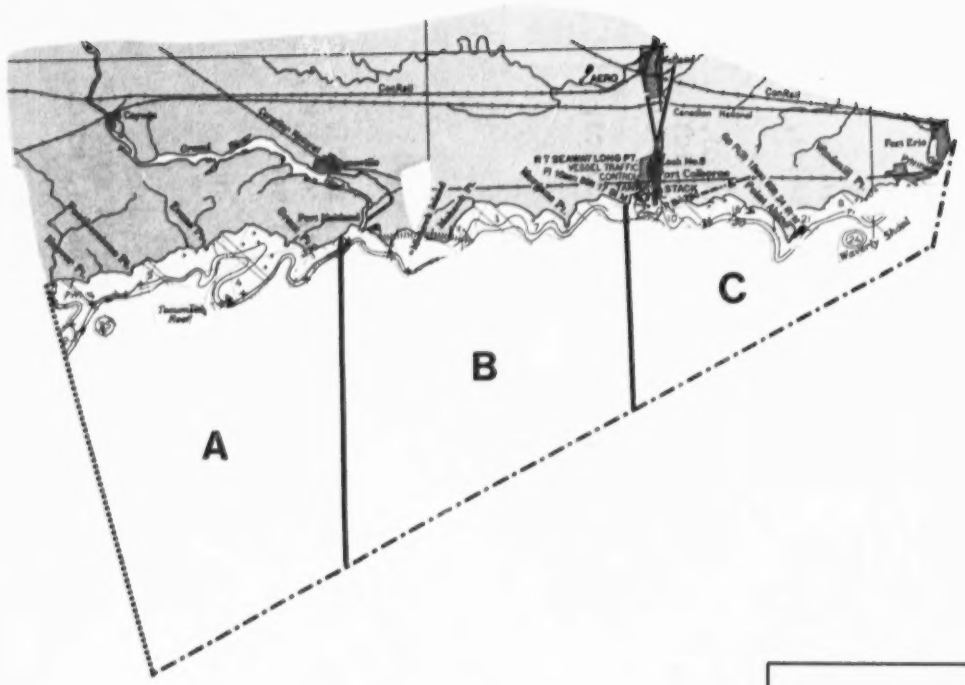

A
B
C
METERS
STATUTE MILES
10
0
10
20
30
40

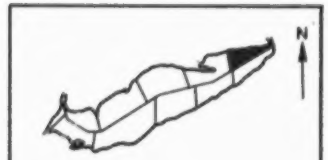
N
Lake Erie
OE-3


LONG POINT BAY
A
B
C
D

METERS
STATUTE MILES
10
0
10
20
30
40

N
Lake Erie
OE-4





Lake Erie | OE-5

Table 8. Fishes[1] with spawning or nurser areas[2] in tributary, littoral mainland, offshore, or littoral offshore waters[3] of Lake Erie.

Statistical fishing district	Geographic area		Spawning area		Nursery area
Mich.		LM:	42(Po)		
	A	T:	1(C), 2[4](C), 8(C), 9(C), 13[4], 41(C), 42(C), 86(C), 118(C), 126(C), 130(C)	T:	1(C), 41(C), 118(C), 126(C)
		LM:	2[4](C), 8(C), 9(C), 14(C), 38(P), 41(C), 44(C), 46(C), 80(C), 93(C), 98(C), 100(C), 106(P), 107(C), 120(C), 126(C), 129(C), 131[8,9](C), 130(C), 134(C,P)	LM:	9(C), 10(C), 14(C), 38(C), 41(C), 42(C), 46(C), 52(C), 58(C), 86(C), 93(C), 99(C), 100(C), 102(C), 106(C), 107(C), 119(C), 118(C), 126(C), 127(C), 128(C), 130(C), 134(C)
	B	T:	4(C), 9(Po), 10(C), 38(C), 41(C), 44(C), 46(C), 93(C,P), 98(C), 107(C,Po), 119(P), 120(C), 126(C)	T:	4(C), 9(C), 10(C), 44(C), 46(C), 58(C), 70(C), 93(C), 107(C), 119(C), 126(C)
		LM:	6(C), 8(C), 9(C), 14(C), 27(C), 38(C), 41(C), 44(C), 46(C,P), 80(C), 86(C), 93(C), 98(C), 100(C), 107(C), 112(C), 120(C), 126(C), 129(C), 130(C), 134(C)	LM:	4(C), 9(C), 10(C), 14(C), 38(C), 44(C), 46(C), 52(C), 58(C), 71(C), 70(C), 93(C), 99(C), 106(C), 107(C), 119(C), 126(C), 127(C), 129(C), 130(C), 134(C)

Table 8. Cont'd.

Statistical fishing district	Geographic area		Spawning area		Nursery area
O-1		T:	96(C)		
		LM:	96(C)		
	A	T:	1(C), 2[5](C), 4(C), 9(C), 13[5](C), 41(C), 42[5](C), 46(C), 81(C), 83(C), 84(C), 93(C), 107(C), 129(C), 130(C), 134(C)	T:	1(C), 9(C), 46(C), 52(C), 107(C), 126(C), 127(C), 129(C), 130(C)
		LM:	1[5](C), 9(C), 10, 14(C), 27(C), 38(C), 41(C), 44(C), 46(C), 52(C), 58(C,P), 74(C), 80(C), 81(C), 83(C), 84(C), 92(C), 93(C), 99(C), 106(C), 107(C), 110(C), 115(C), 116(C), 126(C,P,Po), 129(C), 130(C,P), 134(C)	LM:	8(C), 9(C), 11[5](C), 38(C), 46(C), 52(C), 58(C), 90(C), 92(C), 93(C), 99(C), 107(C), 126(C), 127(C), 129(C), 130(C), 134(C)
				O:	76(C)
	B	T:	2[5](C), 38(C), 41(C), 46(P), 93(C), 94(C), 100[5](C), 107(C), 130(C), 134(C), 135	T:	38(C), 93(C), 94(C), 134(C)
		LM:	4(C), 6(P), 9(C), 13[5](C), 14(C), 38(C), 41(C), 44(C), 46(C), 48[5](C), 52(C,P), 55[5](C), 58(C), 60(C), 61(C), 62(C), 75[5](C), 92(C), 93(C), 94(C), 96(C), 99(C), 100[5](C), 107(C), 108(C), 110(C), 113(C), 114(C), 115(C), 116(C), 126(C,Po), 128[5](C), 129(C,P), 130(C), 134(C,P)	LM:	4(C), 8(C), 9(C), 14(C), 38(C), 44(C), 46(C), 52(C), 58(C), 62(C), 92(C), 102(C), 107(C), 108(C), 109(C), 113(C), 114(C), 115(C), 116(C), 121(C), 124(C), 126(C), 127(C), 129(C), 130(C), 134(C), 135(C)

Table 8. Cont'd.

Statistical fishing district	Geographic area		Spawning area		Nursery area
O-1	C	T:	1(C), 2[5/](C), 9(C), 14(C), 22(C), 41(C), 42[5/](C), 46(C), 80(C), 93(C), 107(C), 113(C), 126(C), 129(C), 130(C), 134(C)	T:	1(C), 9(C), 38(C), 41(C), 46(C), 52(C), 127(C), 134(C)
		LM:	4(C), 8(C), 9(C), 13[5/](C), 14(C), 38(C), 39(Po), 41(C), 44(C), 46(C), 48[5/](C), 52(C), 58(C), 74(C), 75[5/](P), 90(C), 91(C), 92(C), 93(C), 98(C), 107(C), 108(C), 110(C), 112(C), 113(C), 114(C), 115(C), 116(C), 120(C), 126(C), 129(C), 130(C), 134(C)	LM:	6(C), 9(C), 11[5/](C), 38(C), 44(C), 46(C), 52(C), 58(C), 59(C), 62(C), 64(C), 90(C), 91(C), 92(C), 93(C), 99(C), 102(C), 106(C), 107(C), 112(C), 113(C), 115(C), 116(C), 125(C), 126(C), 127(C), 129(C), 130(C), 134(C)
		O:	129(P)	O:	93(C), 134(C)
O-2	A	T:	1(C), 6(Po), 9(C), 22(C), 41(C,Po), 42[5/](C), 81(C), 82(C), 90(C), 92(C,Po), 93(C), 98(C), 94(C), 97(C,Po), 99(C,P), 107(C,P), 113(C), 114(Po), 115(Po), 116(Po), 130(C), 134(C)	T:	1(C), 8(C), 9(C,Po), 52(C), 93(C), 99(C)
		LM:	8(C,P), 9(C,P), 10(C), 13[5/](C), 14(C), 38(C), 46(C), 52(C,P), 76(C), 93(Po), 97(Po), 99(C), 110(C), 113(C,Po), 126(P), 130(C,P), 131[5,9/](C), 134(C)	LM:	8(C), 9(C,Po), 10(C), 38(C), 46(C), 52(C), 58(C), 67(C), 74(C), 76(C), 93(C), 99(C), 107(C), 113(C), 126(C), 127(C), 130(C), 134(C)

Table 8. Cont'd.

Statistical fishing district	Geographic area		Spawning area		Nursery area
O-2	A (Cont'd.)	O:	8(P), 9(C), 38(C), 52(P), 58(C), 99(C), 107(C), 126(P), 130(P), 131[5,9/](C), 134(C)	O:	8(C), 9(C), 38(C), 46(C), 52(C), 58(C), 99(C), 107(C), 126(C), 127(C), 130(C), 134(C)
	B	T:	9(C), 22, 24, 41(C), 81(C), 82(C), 99(P), 107(C,P), 126(C)	T:	134
		LM:	13[5/](C), 14(C), 38(C,P), 46(Po), 52(C), 58(C), 93(C), 107(C), 110(C), 114(C), 126(C), 127(P), 130(C), 131[5,9/](C), 134(C)	LM:	8(C), 9(C), 14, 38(C), 46(C), 52(C), 58(C), 71(C), 72(C), 73(C), 74(C), 76(C), 77(C), 93(C), 99(C), 102(C), 107(C), 126(C), 127(C), 129(C), 130(C), 134(C), 135(C)
		O:	131[5,9/](C)	O:	14, 38(C)
	C	T:	2[5/](C), 8(Po), 9(C), 22(C), 27(C), 38(Po), 39(C), 41(C), 42[5/](C), 46(Po), 47(C), 50(Po), 52(Po), 61(Po), 64(Po), 74(C), 76(Po), 81(C), 82(C), 83(Po), 84(C), 90(C), 92(C), 103(Po), 107(P), 108(Po), 109(C,Po), 110(Po), 112(P), 113(Po), 114(Po), 115(C), 116(C), 126(Po), 130(C), 134(C)	T:	8(C), 9(C), 38(C), 44(C), 46(C), 47(C), 50(C), 52(C), 61(C), 64(C), 74(C), 76(C), 83(C), 92(C), 103(C), 107(C), 108(C), 109(C), 110(C), 112(C), 113(C), 114(C) 115(C), 126(C), 134(C)
		LM:	8(Po), 9(C), 13[5/](C), 38(C,Po), 44(C), 46(C), 50(Po), 52(C), 58(C), 60(C), 64(Po), 65(Po), 67(C), 74(C), 76(Po), 98(C), 99(Po), 102(C), 108(Po), 109(Po), 110(C,Po), 112(P), 114(C), 115(Po),	LM:	8(C), 9(C), 38(C), 44(C), 46(C), 50(C), 52(C), 58(C), 60(C), 64(C), 65(C), 67(C), 71(C), 74(C),

Table 8. Cont'd.

Statistical fishing district	Geographic area		Spawning area		Nursery area
O-2	C (Cont'd.)	LM:	120(C), 126(C), 127(C,Po), 131[5,9](C), 133(C)	LM:	76(C), 83(C), 93(C), 99(C), 102(C), 107(C), 108(C), 109(C), 110(C), 112(C), 114(C), 115(C), 126(C), 127(C), 130(C), 133(C)
		O:	131[5,9](C)		
	D	T:	1(C), 8(Po), 9(C), 22(C), 24(C), 27(C), 29(C), 38(P,Po), 44(Po), 41(C), 42[5](C), 44(C), 46(C), 47(Po), 50(Po), 52(Po), 58(P), 60(Po), 61(Po), 64(Po), 68(Po), 74(C), 76(P), 81(C), 82(C), 83(C), 90(P), 92(Po), 93(C), 102(Po), 107(P), 108(Po), 109(P), 110(P), 111(Po), 112(P), 113(Po), 114(Po), 115(C), 116(C), 125(Po), 126(C), 127(P), 134(P)	T:	1(C), 4(C), 8(C), 9(C), 38(C,P), 40(C), 44(C), 46(C), 47(C), 50(C), 52(C), 58(C), 60(C), 61(C), 64(C), 67(C), 68(C), 74(C), 76(C), 82(C), 83(C), 90(C), 92(C), 93(C), 102(C), 107(C), 108(C), 109(C), 111(C), 112(C), 113(C), 114(C), 115(C), 116(C), 125(C), 126(C), 134(C)
		LM:	8(Po), 9(C), 13[5](C), 38(C,Po), 44(C), 46(P), 50(Po), 52(P), 58(P), 60(Po), 67(C,P), 76(P), 76(C,P), 99(C), 100[5](C), 107(C), 110(C,P), 115(P), 126(P), 127(P), 131[5,9](C), 134(C)	LM:	4(C), 8(C), 9(C), 38(C), 44(C), 46(C), 50(C), 52(C), 58(C), 60(C), 71(C), 74(C), 76(C), 82(C), 83(C), 90(C), 92(C), 93(C), 99(C), 107(C), 111(C), 112(C), 115(C), 126(C), 127(C), 129(C), 130(C), 134(C)
		O:	100[5](C), 131[5,9](C)		

Table 8. Cont'd.

Statistical fishing district	Geographic area		Spawning area		Nursery area
O-3	A	T:	1(C), 38(C), 42[5]/(C), 46(C), 48[5]/, 81(C), 82(C), 107(P), 130(C)	T:	1(C), 107(C)
		LM:	8(P), 9(P), 14, 38(C), 39(P), 40(C), 46(P), 67(C), 76(C), 99(C), 108(C), 110(C), 126(C), 127(C,P), 131(C), 130, 134(C)	LM:	8(C), 9(C), 37, 38(C), 46(C), 52(C), 58(C), 99(C), 107(C), 126(C), 127(C), 134(C)
		O:	131[5,9]/(C)	O:	100[5]/(C)
	B	T:	1(C), 9(C), 22(C), 24, 27(C), 40(Po), 41(Po), 76(C), 79(Po), 81(C), 82(C), 83, 84, 86(P), 92, 93(C), 107(P), 113(C), 126(C), 127(C), 134(C), 139(P)	T:	1(C), 9(C), 27(C), 38(C), 46(C), 52(C), 72(C), 76(C), 86(C), 93(C), 94(C), 107(C), 113(C), 114(C), 119(C), 120(C), 126(C), 127(C), 134(C), 139(C)
		LM:	2[5]/(C), 8(C), 9(C), 14(C), 38(C), 41(C), 46(C), 58(C), 60(C), 61(C), 62(C), 67(C), 72(C), 93(C), 100[5]/(C), 101[5]/(C), 107(C), 108(C), 110(C), 113(C), 114(Po), 125(C), 126(C), 127(C), 130(C), 131[5,9]/(C), 134(C)	LM:	4(C), 8(C), 9(C), 38(C), 46(C), 52(C), 58(C), 71(C), 72(C), 76(C), 86(C), 94(C), 99(C), 100[5]/(C), 102(C), 108(C), 112(C), 114(C), 119(C), 120(C), 125(C), 126(C), 127(C), 134(C), 135(C), 139(C)
		O:	46(C), 100[5]/(C), 131[5,9]/(C)	O:	38(C), 46(C), 52(C), 99(C), 100[5]/(C)

Table 8. Cont'd.

Statistical fishing district	Geographic area		Spawning area		Nursery area
Penn.	A	T:	1(C), 9(C), 22(C), 24(C), 27(C), 38(C), 43(C), 44(C), 46(C), 76(C), 81(C), 83(P), 93(Po), 113(C), 114(C), 122(C), 127(C), 134(C)	T:	1(C), 9(C), 38(C), 52(C), 72(C), 76(C), 113(C), 114(C), 127(C), 134(C)
		LM:	2[6], 8(C), 13[7](C), 14[7](C), 38(C), 44(C), 46(C), 52(C), 58(C), 67(P), 93(C), 94(C), 99(C), 107(C), 113(C), 122(C), 126(C), 130(C), 134(C)	LM:	8(C), 9(C), 38(C), 46(C), 52(C), 76(C), 99(C), 107(C), 122(C), 125(C), 126(C), 127(C), 130(C), 134(C)
		O:	14[7](P), 46(C), 58(C), 93(C), 94(C), 99(C), 107(C), 134(C)	O:	46(C), 99(C), 107(C), 125(C), 127(C), 130(C)
	B	T:	27(C), 38(C), 46(C), 76(C), 93(Po), 113(C), 122(C), 127(C)	T:	76(C), 127(C)
		LM:	3[7](C), 4(C), 6(C), 9(C), 13[7](C), 14[7](C), 38(C), 40(C), 41(C), 42(C), 46(C,P), 52(C), 58(C), 67(P), 92(P), 93(C), 98(P), 94(C), 99(C), 113(C), 114(C), 118(C), 120(C), 122(C), 126(C), 130(C), 134(C)	LM:	4(C), 6(C), 9(C), 40(C), 41(C), 46(C), 52(C), 76(C), 99(C), 122(C), 126(C), 130(C), 134(C)
		O:	13[7], 58(C), 93(C), 94(C), 99(C), 100[7](C), 131[9,10], 134(C)	O:	99(C), 100[7](C), 125(C), 127(C), 130(C)
New York	A	T:	27(C), 29(C), 33(C), 38(C), 46(C), 108(C), 113(C)	T:	27(C), 108(C), 113(C)
		LM:	31(C), 46(C), 126(C), 130(C)	LM:	38(C), 58(C), 100(C)
				O:	38(C), 136(C)

Table 8. Cont'd.

Statistical fishing district	Geographic area		Spawning area		Nursery area
New York	B	T:	1(C), 2(P), 22(C), 24(C), 27(C), 29(C), 38(C), 46(C), 54(C,P), 74(C), 76(C), 81(C), 84(C), 99(C), 108(C), 113(C), 130(C)	T:	1(C), 27(C), 74(C), 76(C), 93, 108(C), 113(C)
		LM:	1(C,P), 8(C,P), 9(C,P), 13, 14(C), 29(C), 31(C), 38(C), 41(P), 42(P), 44(C,P), 46(C,P), 52(C), 58(C), 71(C), 72(C), 70(C,P), 76(P), 92(C), 93(C), 99(C), 100(C,P), 107(C,P), 113(C,P), 126(C), 127(C,P), 130(C), 134(C,P), 136(P)	LM:	8(C), 9(C), 38(C), 44(C), 46(C), 52(C), 58(C), 70(C), 71(C), 72(C), 76(C), 93, 99(C), 107(C), 108(C), 113(C), 126(C), 127(C), 139(C), 134(C), 136(C)
				O:	38(C), 61(C), 100(C), 136(C)
	C	T:	1(C), 22(C), 24(C), 27(C), 29(C), 64(C), 76(C,P), 93(C), 94(C), 113(C,P), 128(C), 130(C)	T:	1(C), 61(C), 64(C), 74, 76(C), 81(C), 82, 92(C), 113(C), 134(C)
		LM:	2(C,P), 58(C), 93(C), 113(C), 125(C), 126(P), 130(C)	LM:	38(C), 61(C), 81(C), 82, 100(C), 125(C), 126(C)
				O:	38(C), 61(C), 126(C), 136(C)
		LO:	Wy(C)	LO:	100(C)
OE-1		LM:	Ca(Po)		
	A	T:	41(C)		

Table 8. Cont'd.

Statistical fishing district	Geographic area		Spawning area		Nursery area
OE-1	A (Cont'd.)	LM:	14(C), 130(C)	LM:	8(C), 41(C), 52(C), 102(C), 126(C)
		LO:	130(C,Po)	LO:	126(C)
	B	T:	38(C)		
		LM:	2(C), 14(C), 31(Po), 38(C), 52(C), 107(C), 119(C), 118(C), 126, 130(C)	LM:	38(C), 52(C), 61(C), 107(C), 126(C), 130(C)
				O:	54, 134(C)
OE-2	A	LM:	13, 38(C), 46(C), 107(C), 130(C)	LM:	38(C)
				O:	38(C)
	B	T:	38(C)		
		LM:	13, 38(C), 130(C)	LM:	38(C)
				O:	38(C), 100(C)
	C	T:	46(C)		
		LM:	2(C), 6(C), 8, 13, 31(Po), 38(C), 41(C), 42(C), 112(C), 113(C), 114(C), 118(C), 119(C), 130(C)	LM:	8(C), 38(C), 41(C), 114(C), 126(C)
				O:	38(C), 126(C)
OE-3	A	LM:	14(C), 38(C)	LM:	38(C)
				O:	38(C)
	B	T:	34(C), 27(C)		
		LM:	13(C), 14(C), 38(C)	LM:	38(C)
		O:	100(C)	O:	38(C), 100(C)

Table 8. Cont'd.

Statistical fishing district	Geographic area		Spawning area		Nursery area
OE-3	C	T:	1(C), 22(C), 24(C), 34(C), 27(C), 29(C), 38(C), 130(C)	T:	1(C)
		LM:	13(C), 14(C), 38(C)	LM:	38(C)
		O:	14(C)	O:	38(C)
OE-4	A	T:	2(C), 22(C), 24(C), 27(C), 38(C)		
		LM:	38(C)	LM:	38(C)
		O:	14(C)	O:	38(C), 100(C)
	B	LM:	13(C), 38(C)	LM:	38(C), 67(C)
				O:	38(C), 100(C)
	C	T:	1(C), 11(C), 22(C), 24(C), 27(C), 29(C), 38(C), 41(C), 74(C), 76(C), 78(C), 80(C), 84(C), 86(C), 126(C), 129(C), 130(C), 131(C)	T:	1(C)
		LM:	2(C), 4(P), 6(C), 9(C), 13(C), 14(C), 38(C), 40(P), 41(C), 42(C), 44(C), 46(C), 50(C), 58(P), 61(P), 64(C), 78(C), 92(C), 93(C), 95(C), 99(P), 102(P), 107(C,P), 108(C), 110(C), 112(C), 113(C), 114(C), 116(C), 118(C), 120(C), 126(C), 130(C), 131(C)	LM:	4(C), 6(C), 9(C), 14(C), 38(C), 40, 41(C), 44, 46(C), 50(C), 57(C), 58(C), 61(C), 64(C), 78(C), 92(C), 95(C), 96, 99(C), 101(C), 102(C), 107(C), 108(C), 110(C), 112(C), 114(C), 116(C), 123(C), 126(C), 129(C), 135(C)

Table 8. Cont'd.

Statistical fishing district	Geographic area		Spawning area		Nursery area
OE-4	C (Cont'd.)	O:	126(C)	O:	38(C)
	D	T:	1(C), 22(C), 24(C), 27(C), 29(C), 31(C), 38(C), 86(C)	T:	1(C)
		LM:	12(C,P), 13, 14, 31(C), 38(C), 29(C), 41(C), 126(C)	LM:	9(C), 13(C), 38(C), 29, 46(C), 52(C), 58(C), 76(C), 84(C), 99(C), 107(C), 113(C), 114(C), 126(C), 127(C)
		O:	14(C), 100(P), 126(C)	O:	38(C), 54(C), 61(C), 100(C)
OE-5	A	LM:	14, 38(C)	LM:	38(C)
				O:	38(C), 61(C), 100(C), 136(C)
	B	T:	1(C), 11(C), 12(C), 14(C), 22(C), 24(C), 27(C), 41(C), 86(C), 130(C)	T:	1(C)
		LM:	13, 14, 38(C), 113(C)	LM:	38(C)
		O:	14(C), 131(C)	O:	38(C), 61(C), 136(C)
	C	T:	38(C)		

Table 8. Cont'd.

Statistical fishing district	Geographic area	Spawning area	Nursery area
OE-5	C (Cont'd.) LM:	38(C), 113(C), 114(C), 126(C)	LM: 38(C), 58(C), 101(C), 114(C), 126(C)
			O: 38(C), 61(C), 100(C), 136(C)

1/ Numerical species code according to Table 12.

2/ Spawning or nursery grounds are classified as confirmed (C), probable (P), or potential (Po); see text for definitions. When information was not available to unequivocally support the assignment of one of the classifications, no classification was given.

3/ Waters within the geographic area are classified as tributary (T), littoral mainland (LM), offshore (O), or littoral offshore (LO); see text for definitions.

4/ Species listed by State of Michigan as "threatened."

5/ Species listed by State of Ohio as "endangered."

6/ Species listed by State of Pennsylvania as "endangered or threatened."

7/ Species listed by State of Pennsylvania as "uncommon or rare."

8/ Species listed by State of Michigan as "endangered."

9/ Species listed by U.S. Department of Interior as "endangered."

10/ Species listed by State of Pennsylvania as "endangered or threatened" and "probably extinct."

NIAGARA RIVER

International Boundary
State Boundary
Statistical Fishing District
Geographic area

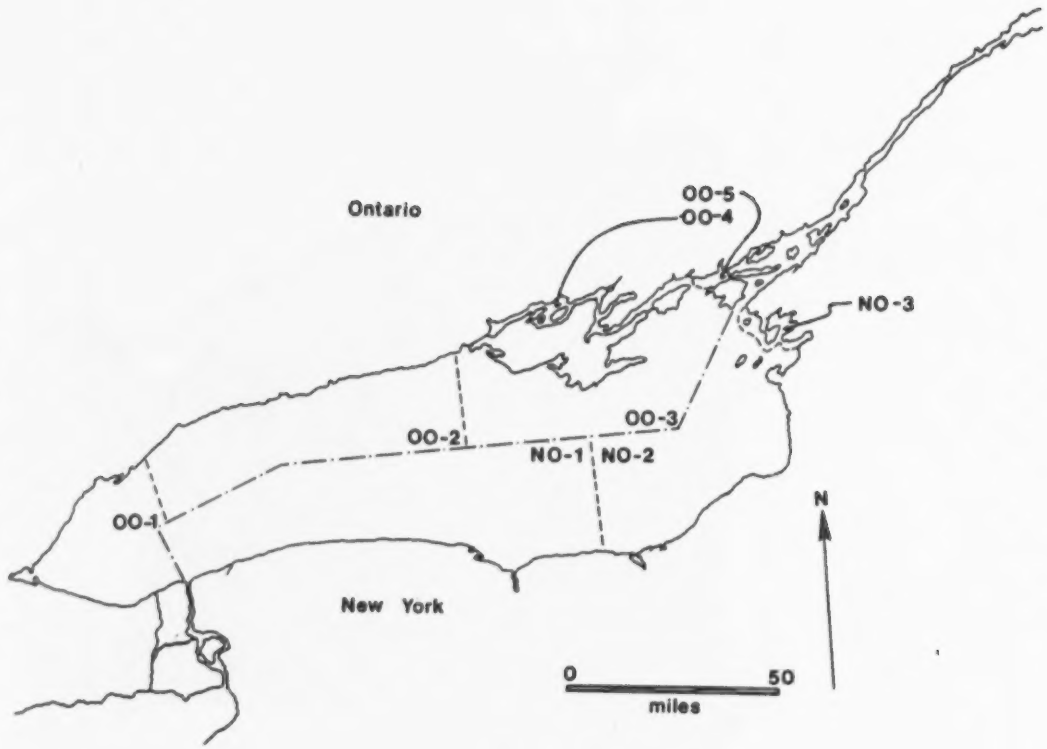
Table 9. Fishes[1] with spawning or nursery areas[2] in tributary, littoral or navigation channel waters[3] of the Niagara River.

Geographic area		Spawning area		Nursery area
A	T:	41(C), 42(P), 85(C), 86(C), 114(C), 118(C), 130(C)	T:	85(C)
	L:	2(C), 38(C), 41(C,Po), 42(C), 108(C), 113(C), 114(C), 118(C)	L:	4(C), 42(C), 58(C), 76(C), 108(C), 113(C), 126(C), 130
B	L:	13(C), 27(C), 28(C), 41(C), 113(C), 118(C)	L:	1(Po), 104(C), 130

[1] Numerical species code according to Table 12.

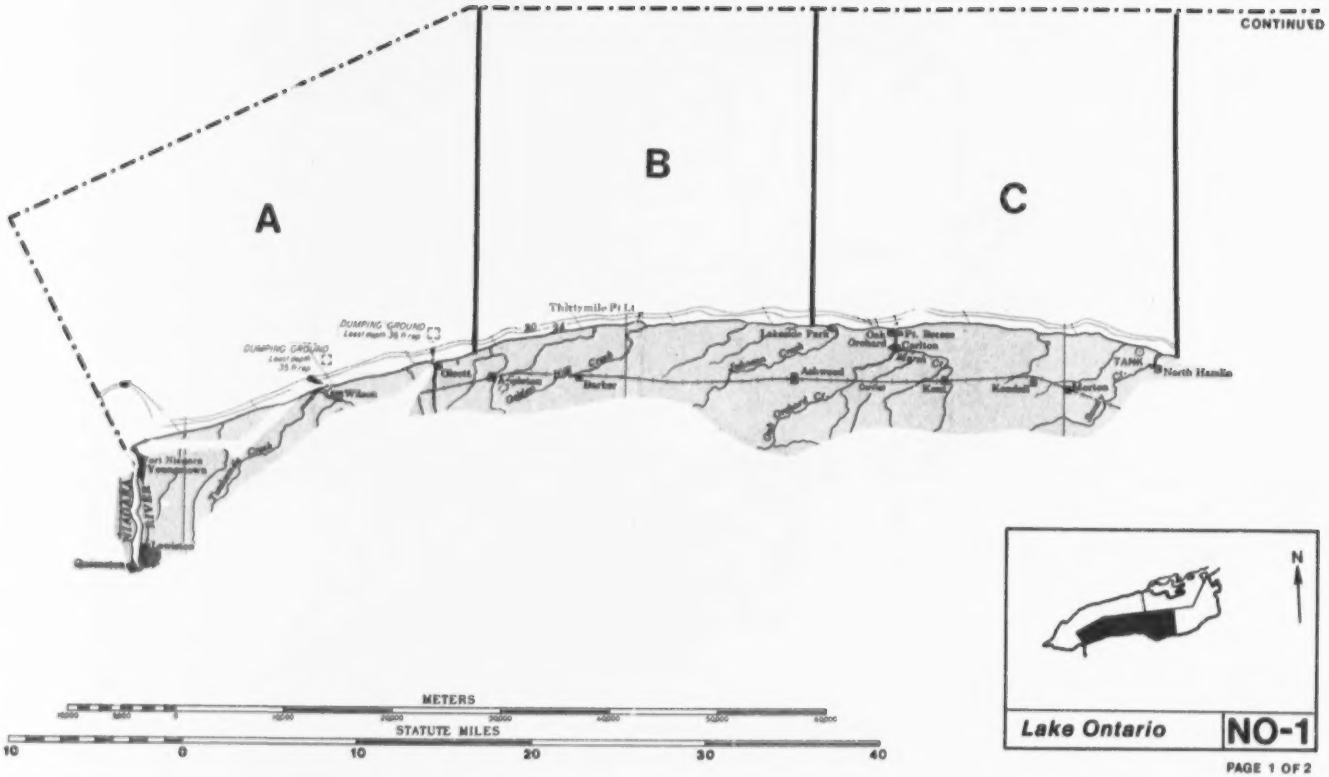
[2] Spawning or nursery grounds are classified as confirmed (C), probable (P), or potential (Po); see text for definitions.

[3] Waters within the geographic area are classified as tributary (T), littoral (L) or navigation channel (N); see text for definitions.

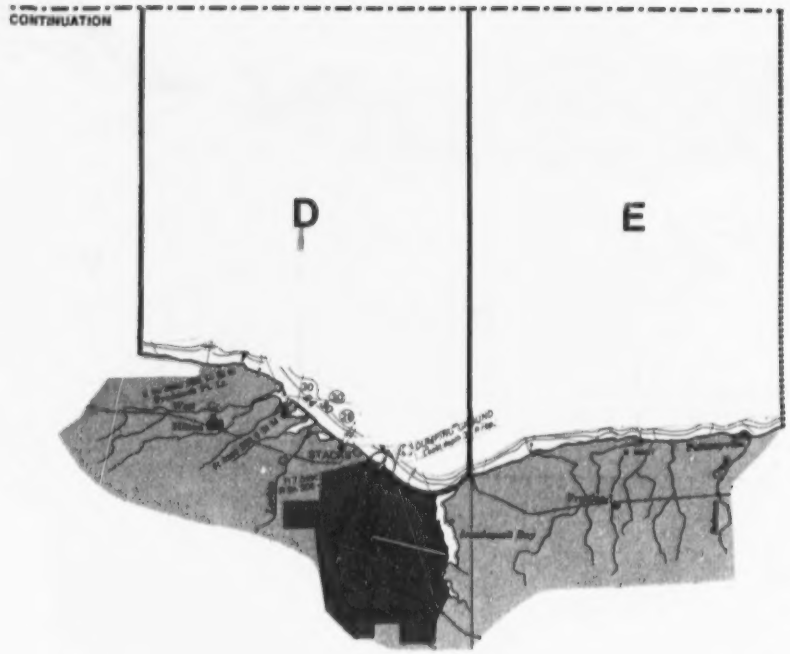


LAKE ONTARIO

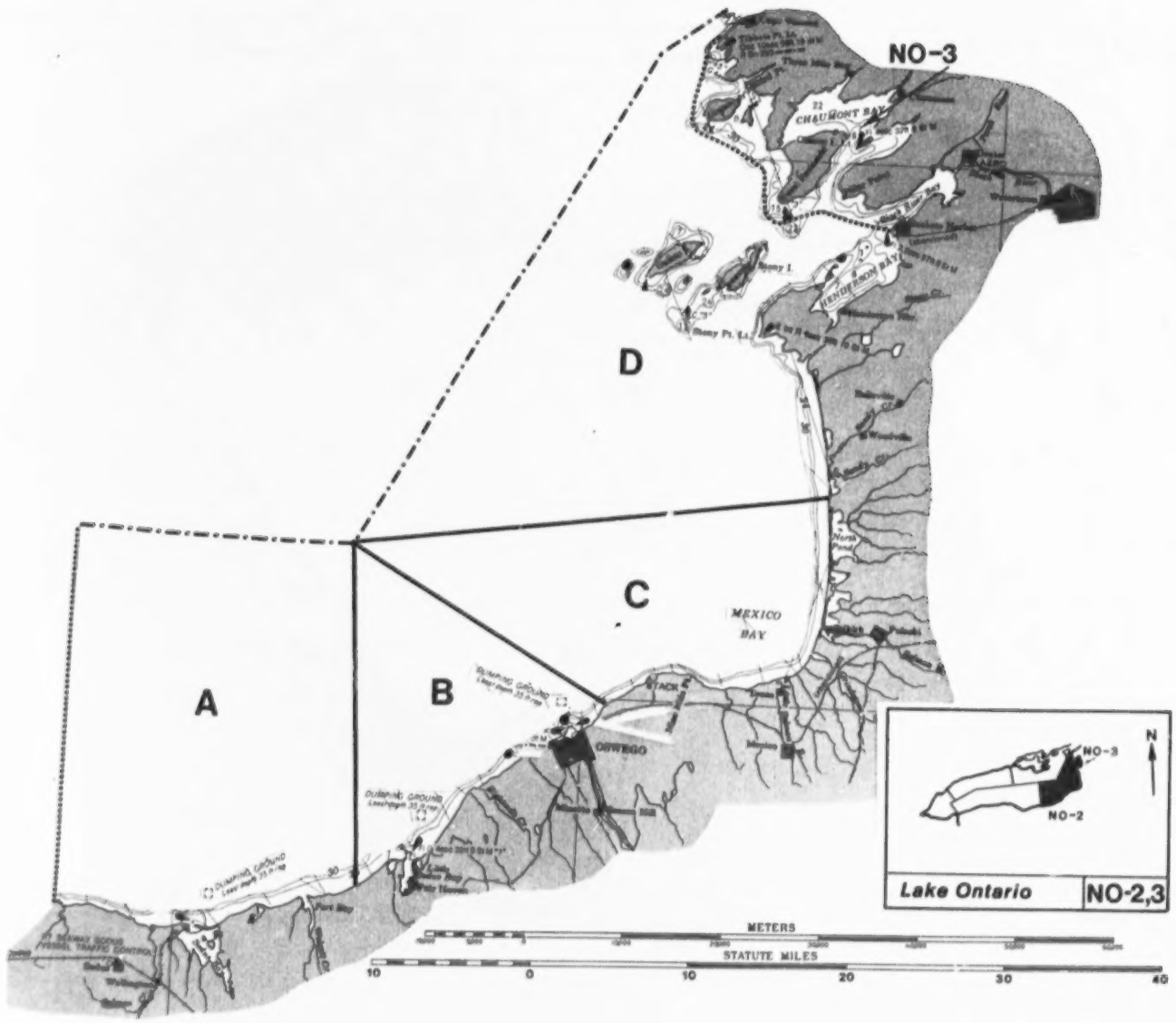
International Boundary
State Boundary
Statistical Fishing District
Geographic area

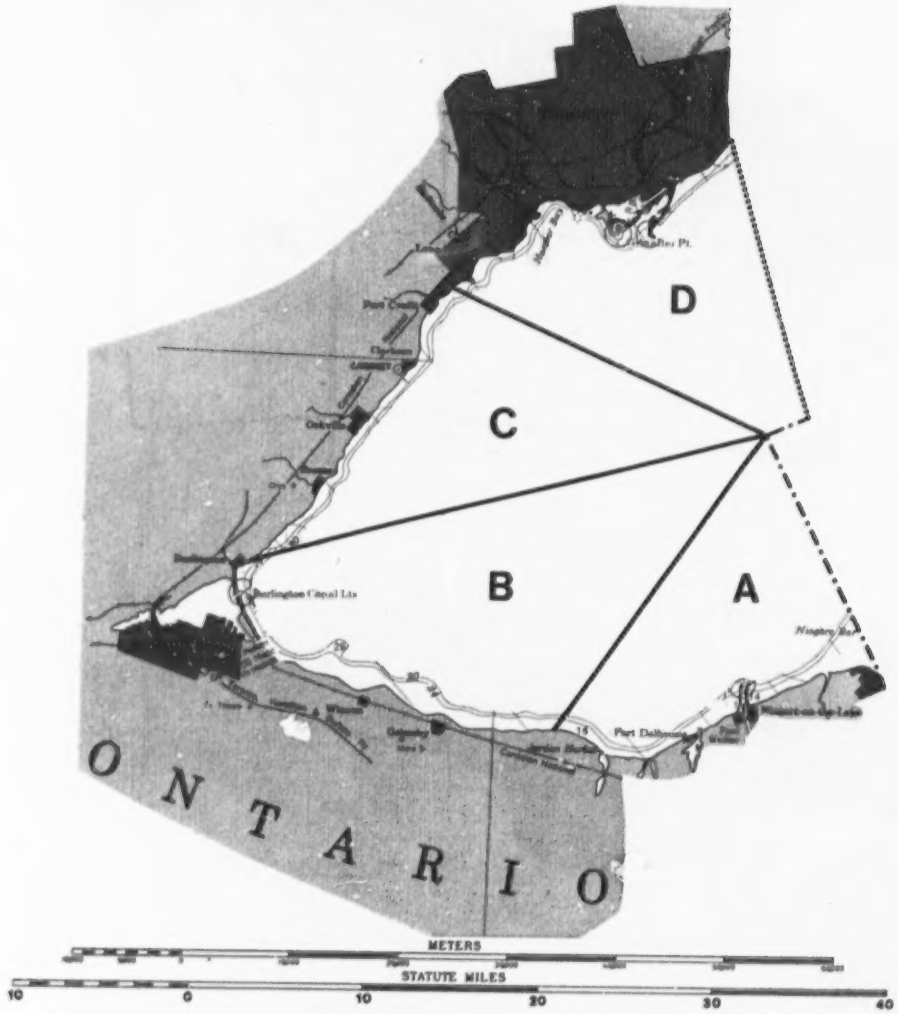

A
B
C
CONTINUED
Thirtymile Pt Lt
DUMPING GROUND
DUMPING GROUND
Lakeside Park
Oak Orchard
Pt. Breeze
Carlton
Ashwood
Hamlet
Marion
North Hamlin
Port Niagara
Youngstown
METERS
STATUTE MILES
10
0
10
20
30
40
N
Lake Ontario
NO-1

PAGE 1 OF 2

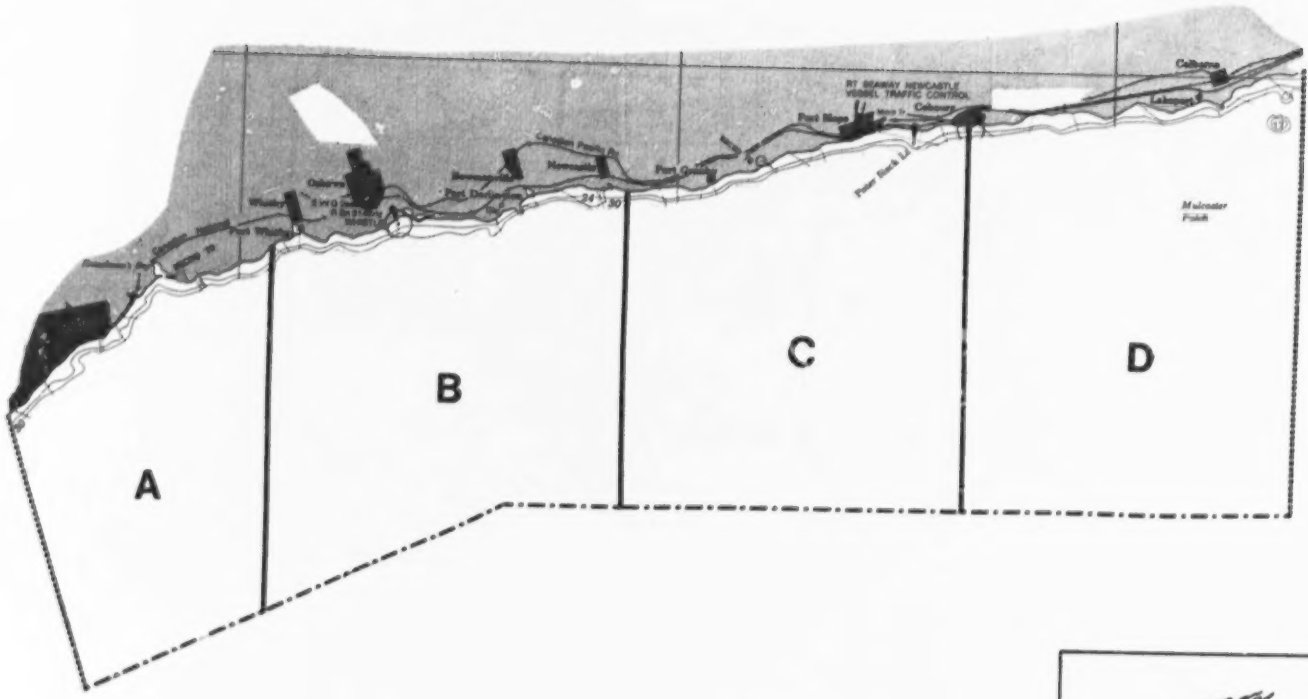


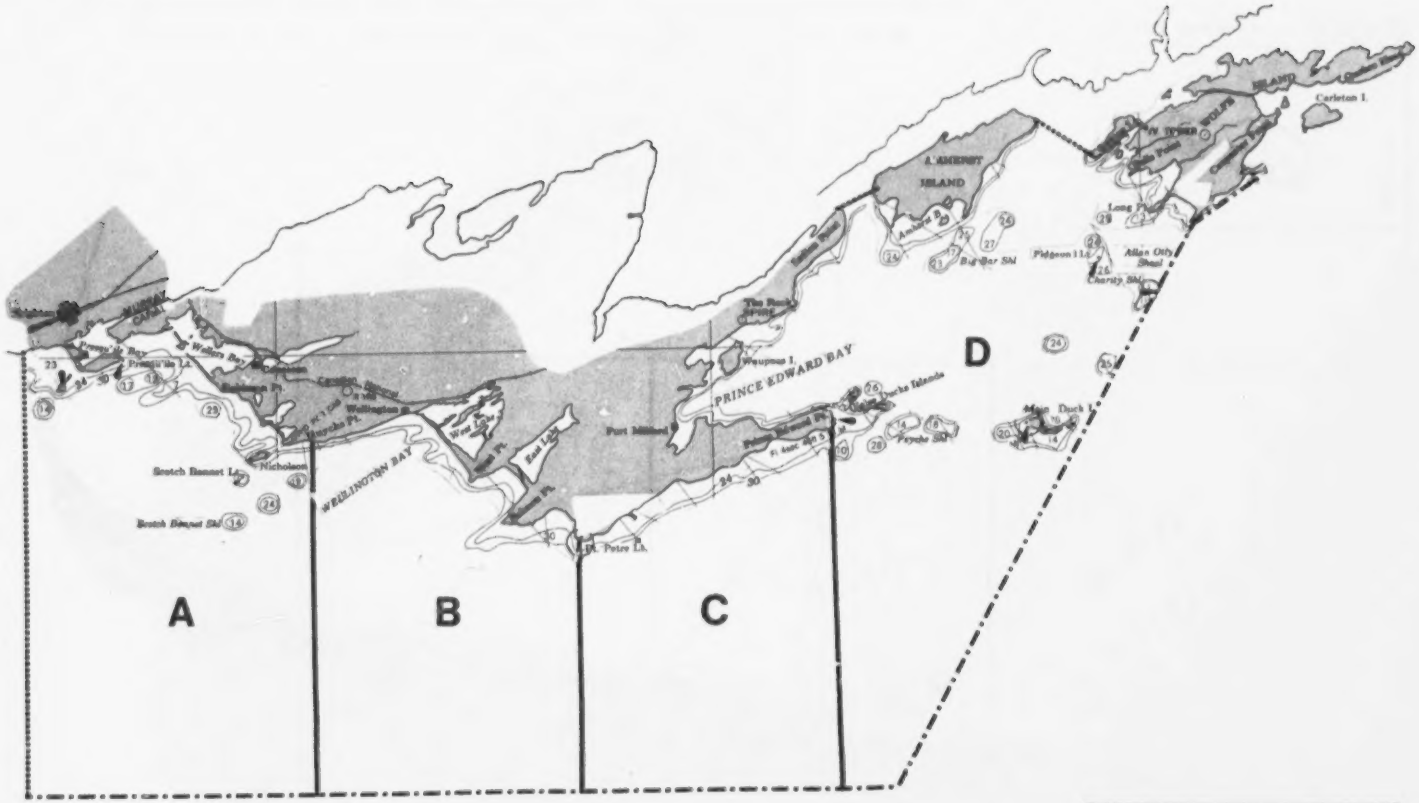
NO-1
PAGE 2 OF 2

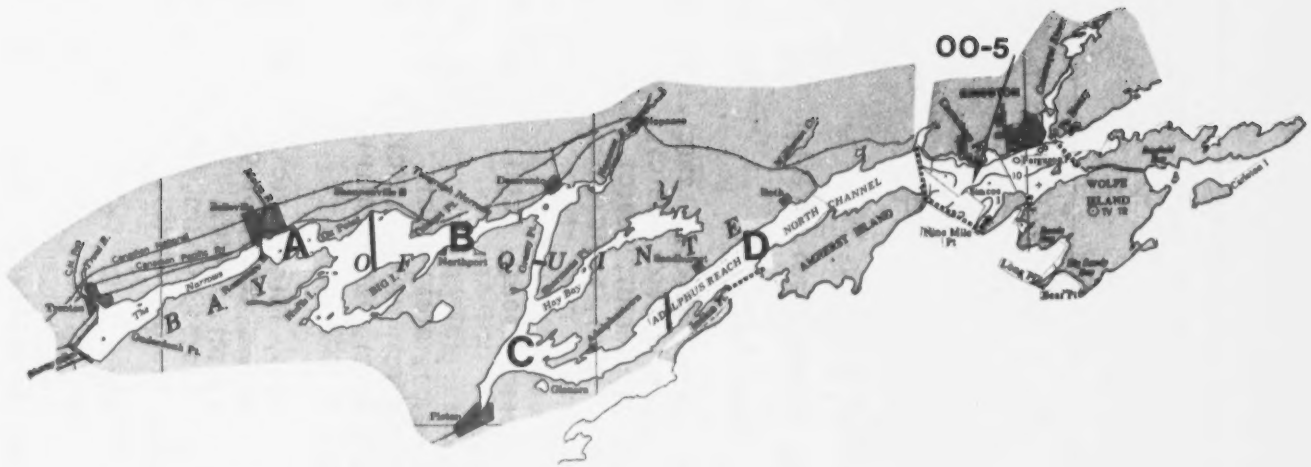

NO-3
CHAUMONT BAY
HENDERSON BAY
D
C
MEXICO BAY
A
B
OSWEGO
DUMPING GROUND
NO-2
N
Lake Ontario
NO-2,3
METERS
STATUTE MILES
10
0
10
20
30
40


D
C
B
A
ONTARIO
METERS
STATUTE MILES
10
0
10
20
30
40

N
Lake Ontario
OO-1


A
B
C
D
RT SEAWAY NEWCASTLE
VESSEL TRAFFIC CONTROL
Cobourg
Port Hope
Port Granby
Malcolmson Point
METERS
STATUTE MILES
10
0
10
20
30
40
N
Lake Ontario
00-2


A
B
C
D
PRINCE EDWARD BAY
WELLINGTON BAY
Carleton I.
Main Duck I.
Scotch Bonnet Lt.
Scotch Bonnet Sh
Nicholson
Wellington
Pt. Petre Lt.
Fort Milford
Weaupaus I.
Pigeon Isl.
Allan Otty Shoal
Charity Shl
Bar Bar Shl
Psyche Shl
METERS
STATUTE MILES
10
0
10
20
30
40
N
Lake Ontario
00-3


00-5
BAY OF QUINTE
NORTH CHANNEL
AMHERST ISLAND
ADOLPHUS REACH
WOLFE ISLAND
Kingston
Nine Mile Pt
Hay Bay
Deseronto
Picton
Belleville
Trenton
Napanee
Gananoque
Brockville
Prescott
Cobourg
Oshawa
Toronto
Hamilton
Niagara
Rochester
Oswego

METERS
STATUTE MILES
10
0
10
20
30
40

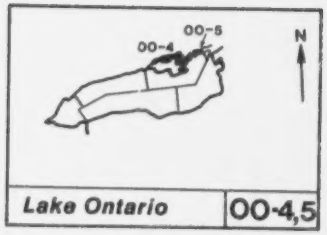

00-4
00-5
N
Lake Ontario
00-4,5

Table 10. Fishes[1] with spawning or nursery areas[2] in tributary, littoral mainland, offshore, or littoral offshore waters[3] of Lake Ontario.

Statistical fishing district	Geographic area		Spawning area		Nursery area
NO-1	A	T:	22(C), 24(C), 27(C), 28(C), 29(C), 38(C), 41(C), 52(C), 113(C)	T:	45(C)
		LM:	2(C), 8(C), 38(C), 131[4]	LM:	8(C), 38(C)
		O:	13, 131[4]		
	B	T:	22(C), 27(C), 38(C), 41(C)	T:	45(C)
		LM:	8(C), 38(C)	LM:	8(C), 38(C)
	C	T:	22(C), 24(C), 27(C,P), 28(C), 29(C), 38(C), 41(C), 46(C), 76(C), 92, 106(C), 108(C), 110(C), 112(C), 113(C), 126(Po)	T:	45(C), 52(C), 108(C), 110(C), 112(C), 113(C)
		LM:	8(C), 29(C), 38(C), 52(C), 114(P)	LM:	8(C), 38(C)
	D	T:	1(C), 6(P), 8(C), 22(C), 24(C), 27(C), 28(C), 38(C), 41(C), 46(C), 76(C), 81(P), 92(C), 113(C)	T:	1(C), 27(C), 113(C)
		LM:	8(C), 13(C), 14(C), 38(C), 41(C), 44(P), 46(C), 58(C), 92(C), 104(C), 106(C), 108(C), 110(C), 113(C), 114(C), 125(C), 126(C), 130(C)	LM:	8(C), 38(C), 41(C), 70(C), 106(C), 116(C), 125(C), 126(C), 139(C)
				O:	136(C)
	E	T:	27(C), 29(C), 38(C), 45(C), 60(Po), 64(Po), 113(C)	T:	45(C)

Table 10. Cont'd.

Statistical fishing district	Geographic area		Spawning area		Nursery area
NO-1	E (Cont'd.)	LM:	8(C), 38(C), 60(Po), 64(Po), 113(C), 125(C)	LM:	8(C), 38(C), 46(C), 125(C), 126(C)
				O:	8(C), 125(C)
NO-2		LM:	42(P)		
	A	T:	1(C), 22(C), 24(C), 27(C), 29(C), 38(C), 92(C), 104(Po), 113(Po)	T:	1(C)
		LM:	8(C), 13(C), 14(C), 31(C), 38(C), 41(C), 92(C), 108(C), 113(C), 130(C)	LM:	8(C), 27(P), 38(C), 41(C), 52(C)
	B	T:	1(C), 22(C), 24(C), 27(C), 28(C), 29(C), 38(C), 41(C), 92(C), 106(C), 130(C), 134(C)	T:	1(C), 41(C), 45(C), 113(C), 114(C)
		LM:	8(C), 9(C), 13(P), 38(C), 44(C), 46(C), 52(C), 54(C), 100(C), 104(C), 106(P), 108(C), 113(C), 120(C), 125(C), 126(C), 130(C), 132(C), 134(C)	LM:	8(C), 9(C), 14, 38(C), 46(C), 52(C), 54(C), 58(C), 71(C), 100(C), 106(C), 107(C), 125(C), 126(C), 133(C), 135(C), 139(C)
				O:	8(C), 38(C), 46(C), 71(C), 106(C), 125(C), 126(C), 133(C), 135(C)
	C	T:	1(C), 22(C), 24(C), 27(C), 28(C), 29(C), 38(C), 41(C), 58(C), 76(C,P), 92(C), 104(C), 108(C), 113(C), 130(C)	T:	1(C), 24(C), 27(C), 92(C), 113(C)
		LM:	8(C), 9(C), 13(C), 14(C), 35(C), 31(P), 38(C), 41(C), 46(C), 54(C), 87(C), 91, 92(C), 99(C), 100(C), 104(C), 106(C), 108(C), 113(P),	LM:	8(C), 9(C), 22(C), 35(C), 38(C), 44(C), 46(C), 52(C), 54(C), 58(C),

Table 10. Cont'd.

Statistical fishing district	Geographic area		Spawning area		Nursery area
NO-2	C (Cont'd.)	LM:	118(C), 125(C), 126(C), 130(C)	LM:	76(C), 92(C), 99(C), 100(C), 104(C), 106(C), 107(C), 113, 125(C), 126(C), 135(C)
		O:	131[4/]	O:	8(C), 38(C), 106(C), 125(C), 135(C)
	D	T:	1(C), 22(C), 24(C), 27(C), 28(C), 29(C), 38(C), 41(C), 76(C), 92(C), 110(C), 113(C), 114(C), 126(C)	T:	1(C), 41(C), 92(C), 113(C), 114(C)
		LM:	8(C), 31(C), 38(C), 41(C), 46(C), 76(C), 92(C), 110(C), 114(C), 116(C), 126(C)	LM:	8(C), 38(C), 41(C), 46(C), 58(C), 65(C), 76(C), 92(C), 106(C), 110(C), 112(C), 114(C)
		LO:	13(C), 14(C), 31(C), 113(C)	LO:	113(C)
NO-3		LM:	42(P)		
	A	T:	1(C), 2(C,Po), 4, 28(C), 38(C), 41(C), 76(C), 92(C,Po), 93(C), 106(C), 110(C), 113(C), 114(C), 116(C), 126(C), 130(C)	T:	1(C), 41(C), 46(C), 110(C), 114(C), 116(C)
		LM:	2(C), 4(C), 8(C), 13(C), 14(C), 31(C), 38(C), 41(C,Po), 50(C), 58(C), 76(C), 92(C), 108(C), 110(C), 113(C), 114(C), 116(C), 126(C), 130(C), 131[4/](C)	LM:	8(C), 38(C), 41(C), 46(C), 65(C), 92(C), 99(C), 106(C), 108(C), 110(C), 113(C), 114(C), 125(C), 126(C), 134(C)

Table 10. Cont'd.

Statistical fishing district	Geographic area		Spawning area		Nursery area
00-1		O:	13(C)		
	A	T:	13(C), 21(C), 22(C), 24(C), 27(C), 28(C), 38(C), 41(C), 87(C), 118(C), 130(C)		
		LM:	8(C), 9(C), 13, 31(C), 38(C), 46(C), 76(C), 92(C), 108	LM:	38(C), 108
		O:	36(C)		
	B	T:	1(C), 9(C), 13(C), 22(C), 24(C), 27(C), 28(C), 38(C), 41(C), 76(C), 87(C), 126(C), 129(C), 131(C), 130(C)	T:	1(C), 13(C), 115(C)
		LM:	4(C), 6(C), 8(C), 9(C), 13(C), 14(C), 29(C), 31(C), 38(C), 41(C), 44(C), 46(C), 92(C), 93(C), 105(C), 108(C), 110(C), 113(C), 114(C), 116(C)	LM:	4(C), 14(C), 38(C), 41(C), 46(C), 52(C), 58(C), 68(C), 76(C), 110(C), 112(C), 114(C)
		O:	13(C), 15		
	C	T:	1(C), 22(C), 24(C), 27(C), 28(C), 29(C), 38(C), 76(C), 87(C), 113(C), 118(C), 130(C)	T:	1(C)
		LM:	8(C), 13, 19, 31(C), 38(C)	LM:	38(C)
		O:	36(C)		
	D	T:	1(C), 2(C), 22(C), 24(C), 27(C), 28(C), 29(C), 38(C), 41(C), 45(C), 46(C), 54(C), 64(C), 67(C), 76(C), 84(C), 87(C), 113(C), 118(C), 116, 129(C), 131(C), 130(C)	T:	1(C), 28(C), 41(C), 75(C)
		LM:	6(C), 8(C), 13(C), 14(C), 15, 19, 31(C), 38(C), 41(C), 44(C), 45(C), 54(C), 58(C), 64(C), 92(C), 99(C), 100(C), 104(C), 107(C), 110(C), 116(C), 125(C), 126(C)	LM:	8(C), 13(C), 38(C), 41(C), 44(C), 46(C), 92(C), 93(C), 114()C)

Table 10. Cont'd.

Statistical fishing district	Geographic area		Spawning area		Nursery area
00-1	D (Cont'd.)	O:	36(C), 45		
00-2	A	T:	1(C), 22(C), 24(C), 27(C), 28(C), 38(C), 41(C), 54(C), 66(C), 67(C), 76(C), 87(C), 118(C), 126(C), 130(C)	T:	1(C)
		LM:	8(C), 14(C), 31(C), 38(C), 46(C), 52(C), 92(C), 104(P), 106, 126(C)	LM:	8(C), 38(C), 46(C), 92(Po), 106(C)
	B	T:	1(C), 22(C), 24(C), 27(C), 28(C), 29(C), 38(C), 41(C), 54(C), 66(C), 76(C), 87(C), 107(C), 118(C), 130(C)	T:	1(C)
		LM:	8(C), 14(Po), 26(C,Po), 31(C), 38(C), 41(C), 104(P), 107(C), 126(C)	LM:	8(C), 38(C), 104(C)
		O:	14(Po), 26(Po)		
	C	T:	1(C), 2, 22(C), 24(C), 27(C), 28(C), 29(C), 38(C), 87(C)	T:	1(C)
		LM:	8(C), 14(C), 27(C), 38(C), 41(C), 46(C), 76(C), 104(P), 92(C), 110(C)	LM:	8(C), 38(C), 41(C), 76(C), 92(C), 110(C)
		O:	14(C), 27(C)		
	D	T:	1(C), 8(C), 22(C), 23(C), 24(C), 27(C), 28(C), 38(C)	T:	1(C), 38(C)
		LM:	8(C), 14(C), 38(C)	LM:	8(C), 38(C)
		O:	14(C)		
00-3	A	T:	1(C), 28(C), 38(C), 41(C), 130(C)	T:	1(C)

Table 10. Cont'd.

Statistical fishing district	Geographic area		Spawning area		Nursery area
00-3	A (Cont'd.)	LM:	8(C), 13(C), 22(C), 34(C), 27(C), 31(C), 38(C), 41(C), 113(C), 114(C), 126(C), 130(C)	LM:	8(C), 38(C)
		LO:	31(C)		
	B	T:	41(C), 38(C), 113(C), 114(C), 130(C)		
		LM:	8(C), 14(C), 34(C), 38(C), 41(C), 114(C), 126(C), 130(C)	LM:	8(C), 38(C)
	C	T:	38(C)		
		LM:	8(C), 14(C), 38(C)	LM:	38(C)
	D	T:	38(C), 114(C), 126(C)	T:	75
		LM:	8(C), 13(C), 14(C), 38(C), 41(C), 113(C), 114(C), 126(C)	LM:	38(C), 75
				O:	136
		LO:	14(C), 31(C), 41(C), 99(C), 113(C), 126(C)		
00-4		T:	38(C), 76(P)		
		LM:	4(C), 6(C), 8(C), 9(C), 41(C), 46(C), 92(C), 113(C), 114(C)	LM:	76(C), 112(C), 113(C), 130(C)
	A	T:	1(C), 2(P), 22(C), 24(C), 27(C), 28(C), 38(C), 41(C), 130(C)	T:	1(C)
		LM:	8(C), 9(P), 13(C), 14(C), 38(C), 41(C), 106(P), 126(P), 130(C)	LM:	8(C), 9(C), 14(C), 38(C), 106(C), 126(C)
	B	T:	1(C), 22(C), 24(C), 27(C), 28(C), 130(C)	T:	1(C)
		LM:	8(C), 9(P), 13(C), 14(C), 38(C), 106(P), 126(P), 130(C)	LM:	8(C), 9(C), 14(C), 38(C), 106(C), 126(C)

Table 10. Cont'd.

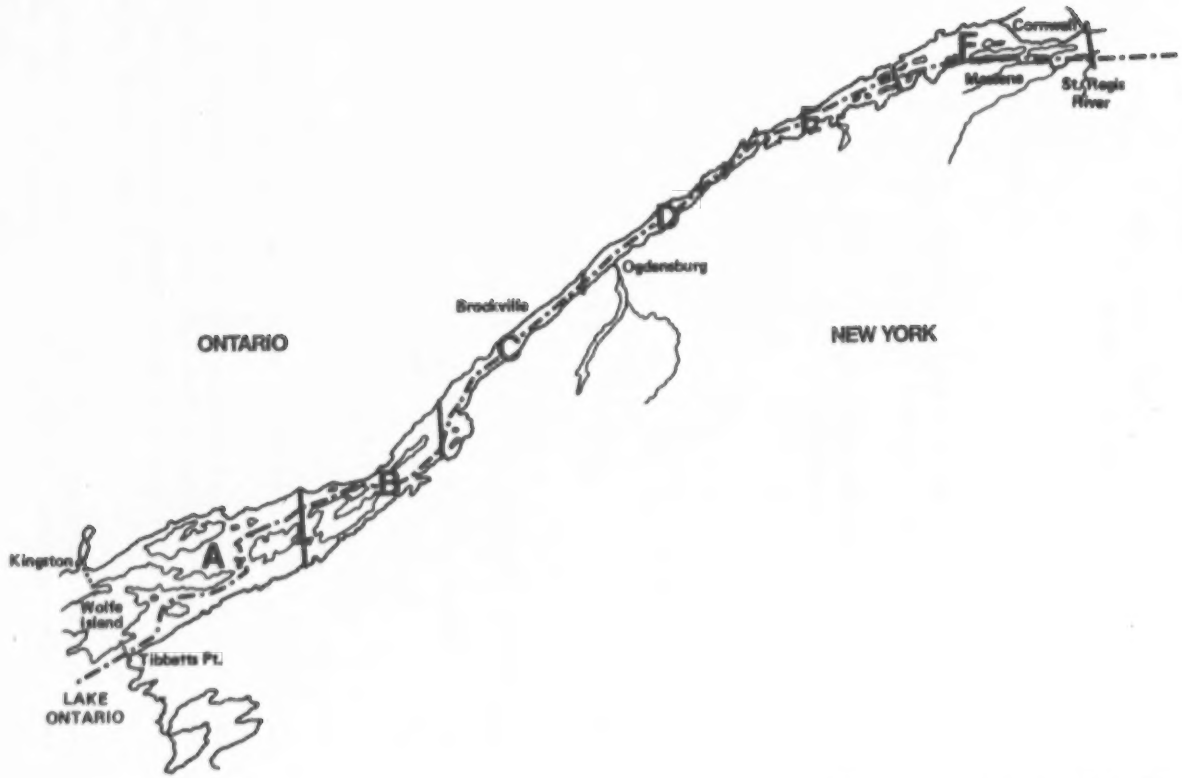
Statistical fishing district	Geographic area		Spawning area		Nursery area
00-4	C	LM:	8(C), 14(C), 38(C), 106(C,P), 126(P), 130(C)	LM:	8(C), 9(C), 14(C), 38(C), 106(C), 126(C)
				O:	9(C), 106(C), 126(C)
	D	T:	8(C), 22(C), 24(C), 27(C), 38(C), 106(C), 126(C)	T:	8(C), 41(C), 106(C)
		LM:	8(C), 22(C), 38(C), 53(C), 67(C), 106(C), 126(C)	LM:	8(C), 9(C), 13(C), 14(C), 38(C), 41(C), 106(C), 110(C), 114(C), 126(C)
				O:	9(C), 106(C), 126(C)
		LO:	113(C), 126(C)	LO:	106(C), 126(C)
00-5	A	T:	38(C), 41(C), 113(C), 114(C)		
		LM:	8(C), 38(C), 41(C), 113(C), 114(C), 126(C)	LM:	38(C)
		LO:	113(C), 114(C)		

1/ Numerical species code according to Table 12.

2/ Spawning or nursery grounds are classified as confirmed (C), probable (P), or potential (Po); see text for definitions. When information was not available to unequivocally support the assignment of one of the classifications, no classification was given.

3/ Waters within the geographic are are classified as tributary (T), littoral mainland (LM), offshore (O), or littoral offshore (LO); see text for definitions.

4/ Species listed by U.S. Department of Interior as "endangered" and by State of New York as "endangered and possibly extinct."



ST. LAWRENCE RIVER

International Boundary
State Boundary
Statistical Fishing District
Geographic area

Table 11. Fishes[1] with spawning or nursery areas[2] in tributary, littoral or navigation channel waters[3] of the St. Lawrence River.

Geographic area		Spawning area		Nursery area
A	T:	8(C), 38(C), 41(C), 51, 76(C), 92(C), 93(C), 108(C), 110(C), 113(C), 114(C), 116(C)	T:	8(C), 41(C), 92(C), 108(C), 110(C), 112(C), 114(C), 116(C)
	L:	8(C,P), 22(C), 31(C), 41(C,P), 42(C), 49(P), 53(P), 58(C,P), 64(P), 67, 92(C), 94(C), 101(C), 108(C), 110(C), 113(C), 114(C), 125(C), 126(C)	L:	8(C), 41(C), 46(C), 92(C), 110(C), 113(C), 126(C)
			N:	8(C)
B	T:	8(C), 41(C), 76(C), 92(C), 93(C), 110(C), 113(C), 114(C), 116(C)	T:	8(C), 41(C), 76, 92, 110(C), 114(C), 116(C)
	L:	8(C), 41(C,Po), 42(P), 51(C), 85(C), 93(C), 113(C,Po), 114(P), 116(C),	L:	8(C), 41(C), 85(C), 92(C), 93(C), 110(C), 113(C), 114(C), 126(C)
			N:	8(C)
C	T:	8(C), 41(C), 42(C), 92(C), 93(C), 113(C), 114(C), 116(C), 130	T:	8(C), 41(C), 113(C), 114(C), 130
	L:	2(C), 8(C), 41(Po), 42(C), 58, 92(C), 93(P), 108(C), 112(C), 113(C), 116(C), 126(C,Po), 127(Po)	L:	8(C), 38(C), 41(C), 93(C), 100(C), 113(C), 114(C), 126(C)
			N:	126(C)
D	T:	2(C), 8(C), 11(C), 28(C), 41(C), 46(C), 50(C), 54(C), 58(C), 64(C), 76(C), 84(C), 92(C), 108(C), 110(C), 113(C), 123(C), 126(C), 127(C), 130(C)	T:	8(C), 41(C), 42, 113(C), 126(C)
	L:	4(C), 8(C), 42(P), 46(C), 54(C), 58(C), 64(C), 81, 100(C), 110(C), 113(C,P), 123(C), 126(C)	L:	8(C), 13(C), 14, 42, 76(C), 100(C), 113(C), 114(C), 126(C)
			N:	125(C)

Table 11. Cont'd.

Geographic area		Spawning area		Nursery area
E	T:	8(C), 38(C), 41(C), 92(C), 113(C,P), 126(P), 130(C)	T:	4(C), 8(C), 41(C), 130(C)
	L:	8(C), 42(P), 46(C), 92(C), 123(C), 126(P)	L:	4(C), 8(C), 13(C), 46(C)
	N:	8, 38(C), 100		
F	T:	1, 2(C,Po), 8(C), 28(C), 41(C), 76(C), 81(C), 84(C), 85(P), 113(C,P)	T:	4(C), 8(C), 41(C), 76(C), 81(C), 113(C), 130(C)
	L:	2(C,P,Po), 8(C), 42(P), 46(C), 123(C), 130(C)	L:	6(C), 8(C), 13(C) 113(C)
	N:	113(P)		

1/ Numerical species code according to Table 12.

2/ Spawning or nursery grounds are classified as confirmed (C), probable (P), or potential (Po); see text for definitions. When information was not available to unequivocally support the assignment of one of the classifications, no classification was given.

3/ Waters within the geographic area are classified as tributary (T), littoral (L) or navigation channel (N); see text for definitions.

Table 12. Numerical codes for fish species and other taxonomic groups included in tables 1-11 of this volume.

1. Sea Lamprey (Petromyzon marinus)
2. Lake sturgeon (Acipenser fulvescens)
3. Spotted gar (Lepisosteus oculatus)
4. Longnose gar (Lepisosteus osseus)
5. Gar spp.
6. Bowfin (Amia calva)
7. American eel (Anguilla rostrata)
8. Alewife (Alosa pseudoharengus)
9. Gizzard shad (Dorosoma cepedianum)
10. Clupeid spp.
11. Mooneye (Hiodon tergisus)
12. Longjaw cisco (Coregonus alpenae)
13. Lake herring (Coregonus artedii)
14. Lake whitefish (Coregonus clupeaformis)
15. Bloater (Coregonus hoyi)
16. Deepwater cisco (Coregonus johannae)
17. Kiyi (Coregonus kiyi)
18. Blackfin cisco (Coregonus nigripinnis)
19. Shortnose cisco (Coregonus reighardi)
20. Shortjaw cisco (Coregonus zenithicus)
21. Pink salmon (Oncorhynchus gorbuscha)
22. Coho salmon (Oncorhynchus kisutch)
23. Kokanee (Oncorhynchus nerka)
24. Chinook salmon (Oncorhynchus tshawytscha)
25. Pygmy whitefish (Prosopium coulteri)
26. Round whitefish (Prosopium cylindraceum)
27. Rainbow trout (Salmo gairdneri)
28. Atlantic salmon (Salmo salar)
29. Brown trout (Salmo trutta)
30. Brook trout (Salvelinus fontinalis)
31. Lake trout (Salvelinus namaycush)
32. Splake (S. fontinalis x S. namaycush)
33. Salmonid spp.
34. Salmon spp.
35. Coregonid spp.
36. Cisco spp.
37. Coregonus spp.
38. Rainbow smelt (Osmerus mordax)
39. Central mudminnow (Umbra limi)
40. Grass pickerel (Esox americanus vermiculatus)
41. Northern pike (Esox lucius)
42. Muskellunge (Esox masquinongy)
43. Stoneroller (Campostoma anomalum)
44. Goldfish (Carassius auratus)
45. Lake chub (Couesius plumbeus)
46. Carp (Cyprinus carpio)
47. Silverjaw minnow (Ericymba buccata)
48. Silver chub (Hybopsis storeriana)
49. River chub (Nocomis micropogon)
50. Golden shiner (Notemigonus crysoleucas)
51. Pugnose shiner (Notropis anogenus)
52. Emerald shiner (Notropis atherinoides)
53. Bridle shiner (Notropis bifrenatus)
54. Common shiner (Notropis cornutus)
55. Pugnose minnow (Notropis emiliae)
56. Blackchin shiner (Notropis heterodon)
57. Blacknose shiner (Notropis heterolepis)
58. Spottail shiner (Notropis hudsonius)
59. Rosyface shiner (Notropis rubellus)
60. Spotfin shiner (Notropis spilopterus)
61. Sand shiner (Notropis stramineus)
62. Mimic shiner (Notropis volucellus)
63. Northern redbelly dace (Phoxinus eos)
64. Bluntnose minnow (Pimephales notatus)
65. Fathead minnow (Pimephales promelas)
66. Blacknose dace (Rhinichthys atratulus)
67. Longnose dace (Rhinichthys cataractae)
68. Creek chub (Semotilus atromaculatus)
69. Fallfish (Semotilus corporalis)
70. Cyprinid spp.
71. Shiner spp.
72. Minnow spp.
73. River carpsucker (Carpiodes carpio)
74. Quillback (Carpiodes cyprinus)
75. Longnose sucker (Catostomus catostomus)
76. White sucker (Catostomus commersoni)
77. Creek chubsucker (Erimyzon oblongus)
78. Lake chubsucker (Erimyzon sucetta)
79. Northern hog sucker (Hypentelium nigricans)
80. Bigmouth buffalo (Ictiobus cyprinellus)
81. Silver redhorse (Moxostoma anisurum)
82. Black redhorse (Moxostoma duquesnei)
83. Golden redhorse (Moxostoma erythrurum)
84. Shorthead redhorse (Moxostoma macrolepidotum)
85. Greater redhorse (Moxostoma valenciennesi)
86. Catostomid spp.
87. Sucker spp.
88. Redhorse spp.
89. Buffalo spp.
90. Black bullhead (Ictalurus melas)
91. Yellow bullhead (Ictalurus natalis)
92. Brown bullhead (Ictalurus nebulosus)
93. Channel catfish (Ictalurus punctatus)
94. Stonecat (Noturus flavus)
95. Tadpole madtom (Noturus gyrinus)
96. Brindled madtom (Noturus miurus)
97. Flathead catfish (Pylodictus olivaris)
98. Bullhead spp.
99. Trout-perch (Percopsis omiscomaycus)
100. Burbot (Lota lota)
101. Banded killifish (Fundulus diaphanus)
102. Brook silverside (Labidesthes sicculus)
103. Brook stickleback (Culea inconstans)
104. Threespine stickleback (Gasterosteus aculeatus)
105. Ninespine stickleback (Pungitius pungitius)
106. White perch (Morone americana)
107. White bass (Morone chrysops)
108. Rock bass (Ambloplites rupestris)
109. Green sunfish (Lepomis cyanellus)
110. Pumpkinseed (Lepomis gibbosus)
111. Orangespotted sunfish (Lepomis humilis)
112. Bluegill (Lepomis macrochirus)
113. Smallmouth bass (Micropterus dolomieui)
114. Largemouth bass (Micropterus salmoides)
115. White crappie (Pomoxis annularis)
116. Black crappie (Pomoxis nigromaculatus)
117. Centrarchid spp.
118. Bass spp.
119. Sunfish spp.
120. Crappie spp.
121. Greenside darter (Etheostoma blennoides)
122. Rainbow darter (Etheostoma caeruleum)
123. Iowa darter (Etheostoma exile)
124. Fantail darter (Etheostoma flabellare)
125. Johnny darter (Etheostoma nigrum)
126. Yellow perch (Perca flavescens)
127. Logperch (Perca caprodes)
128. Channel darter (Percina copelandi)
129. Sauger (Stizostedion canadense)
130. Walleye (Stizostedion vitreum vitreum)
131. Blue pike (Stizostedion vitreum glaucum)
132. Percid spp.
133. Darter spp.
134. Freshwater drum (Aplodinotus grunniens)
135. Mottled sculpin (Cottus bairdi)
136. Slimy sculpin (Cottus cognatus)
137. Spoonhead sculpin (Cottus ricei)
138. Pourhorn sculpin (Myoxocephalus quadricornis)
139. Sculpin spp.

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15. Supplementary Notes
This document is one of a set of fourteen volumes.

16. Abstract (Limit: 200 words)
This atlas is a compilation of current spawning and nursery information concerning the fishes of the Great Lakes. The complete set consists of fourteen volumes. The information may be used to support permit and project reviews, impact statement reviews, planning of baseline research, and corrdination with other agencies, and identification of data gaps. The report locates spawning and nursery areas in the Great Lakes and describes spawning and nursery characteristics, timing, and habitats of major fish species of the Great Lakes area.
The first volume is a summary by geographic area, volumes II through XII contain the specific areas referenced in volume I. Volume XIII contains the species spawning and nursery characteristics for the major species, and Volume XIV cites the references used in compiling this work.
The titles of the volumes addressing the spawning and nursery areas for each fish species site specifically are: II, Lake Superior; III, St. Mary's River; IV, Lake Michigan; V, Lake Huron; VI, St. Clair River; VII, St. Clair Lake; VIII, Detroit River; IX, Lake Erie; X, Niagara River; XI, Lake Ontario; XII, St. Lawrence River. The title of Volume XIV is, Species Reproduction Characteristics.

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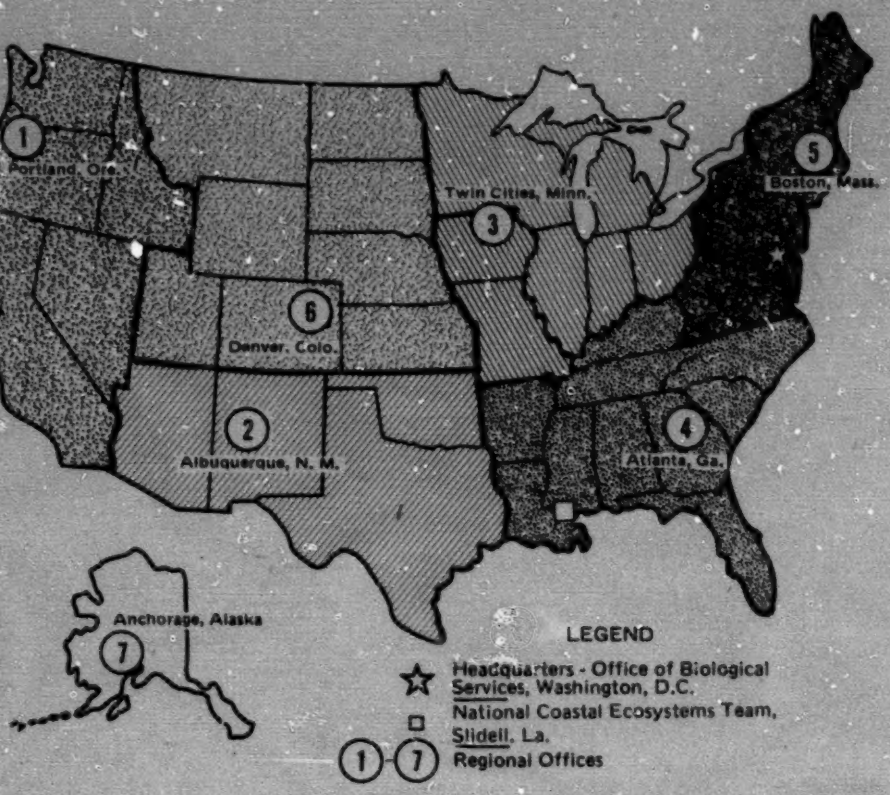

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